



**CE Obsidian Energy LLC**  
A Limited Liability Company

September 18, 2002

Mr. Steve Larson  
Executive Director  
California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814

<b>DOCKET</b> <b>02-AFC-2</b>
DATE <u>SEP 18</u> 2002
RECD. <u>SEP 19</u> 2002

Re: CE Obsidian Energy LLC Salton Sea Unit 6 Power Plant Project –  
Responses to Data Adequacy Recommendation Dated August 21, 2002 --  
(02-AFC-02)

Dear Mr. Larson:

In accordance with the provisions of Title 20, California Code of Regulations, CE Obsidian Energy, LLC (CEOE) has submitted an Application for Certification (AFC) with the California Energy Commission (CEC) seeking authority to construct and operate the 185-megawatt net Salton Sea Unit 6 power plant project (SSU6 Project) (02-AFC-02).

On August 21, 2002, the CEC issued a Data Adequacy Recommendation in this matter. In that recommendation, the CEC indicated that the AFC was inadequate in ten technical areas for the 12-month review process (Cal. Code of Regs., title 20, § 1704, Appendix B) and in eight technical areas for the six-month review process (Cal. Code of Regs., title 20, §§ 2021-2031). The Commission accepted this Recommendation on August 28, 2002.

We have prepared the attached responses to the data adequacy deficiencies identified in the Data Adequacy Recommendation. We believe that these responses satisfy all of the data adequacy requirements for the 12-month process and satisfy the requirements in seven of the eight technical areas for the six-month process.

However, despite the Applicant's efforts, we have found that it is not practical to obtain certain written confirmations from the neighboring utilities, which the CEC has identified as data adequacy requirements for the six-month process (See, Data Adequacy Worksheets, Attachment B to the Data Adequacy Recommendation, pages 74, 76, and 77, with reference to Cal. Code of Regs., title 20, §§ 2022(b)(3)(A) and (B)). To the extent that such confirmations are determined to be data adequacy requirements for the six-month process, then CEOE requests that, with the submittal of the attached

A Non-recourse Affiliate of

**MIDAMERICAN** ENERGY HOLDINGS COMPANY  
7030 Gentry Road, Calipatria, California 92233  
(760) 348-4066 Fax: (760) 348-4073

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Responses, the AFC be determined complete for processing under the 12-month review process.

Sincerely,

A handwritten signature in black ink, appearing to read "B. Raemy", with a long horizontal flourish extending to the right.

Bernard Raemy  
Project Development Manager

An Affiliate of

**MIDAMERICAN** ENERGY HOLDINGS COMPANY  
302 South 36<sup>th</sup> Street, Suite 400, Omaha, Nebraska 68131  
(402) 341-4500 Fax: (402) 231-1668

## **AIR QUALITY**

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (2) (C) (Air Quality):** A detailed description of the mitigation, which an applicant shall propose, for all impacts from criteria pollutants that currently exceed state or federal ambient air quality standards, but are not subject to offset requirements under the district's new source review rule.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment AQ-1:** Please address the necessity of providing PM10 mitigation for the project's PM10 and PM10 precursor (including NO<sub>x</sub>, VOC, SO<sub>x</sub> and NH<sub>3</sub>) emissions. Please provide a detailed PM10 mitigation plan.

**Response:** A list of potential emission reduction credits for PM10 has been submitted to the CEC under separate cover.

## BIOLOGICAL RESOURCES

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (1) (B) (All):** Information demonstrating that the project as proposed in the application will comply with all such standards, ordinances, and laws.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment BIO-1:** Please provide documentation of the consultation process with the U.S. Fish and Wildlife Service concerning compliance with the Endangered Species Act for construction of Salton Sea Unit 6, including a letter from the federal lead agency indicating that the Biological Assessment has been sent to the USFWS, and a schedule for completing the consultation process with the USFWS.

**Response:** U.S. Army Corps of Engineers (Corps) (J. Baker) indicated that they would be sending their request letter to the USFWS to initiate Section 7 consultation under the federal Endangered Species Act ("ESA") during the later part of the week ending September 13, 2002.

On July 11, 2002, the Applicant and the Imperial Irrigation District (IID) submitted to the U.S. Army Corps of Engineers (Corps) an application for a permit under Section 404 of the Clean Water Act for construction of a proposed geothermal power plant, the Salton Sea Unit 6 (SSU6) project, in Calipatria, California. On August 21, 2002, the Applicant and the IID met with representatives from the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game, Sonny Bono Salton Sea National Wildlife Refuge and the California Energy Commission at the SSU6 site to discuss the project and view various portions of the site. On August 27, 2002, the Applicant forwarded to the Corps the following proposed timeline for the 404 permit process, including completion of the Section 7 consultation under the ESA. If consultation is initiated on September 13, 2002, each of the dates in the proposed timeline will be extended by 4 days.

**September 9, 2002** Corps issues letter to USFWS requesting initiation of consultation on the Project under Section 7 of the Endangered Species Act and enclosing the Biological Assessment.

Corps issues public notice with 30-day comment period if individual permit being issued under Section 404

*Dated September 18, 2002*

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**October 11, 2002** USFWS advises Corps that Biological Assessment is complete and Section 7 consultation is initiated

**October 9, 2002** 30-day public comment period closes on Corps 404 permit public notice (if necessary)

**January 9, 2003** Section 7 consultation with USFWS is complete. USFWS has 45 days to complete Biological Opinion.

**February 25, 2003** USFWS issues Biological Opinion.

**March 4, 2003** Corps issues 404 permit and/or NWP 12 authorization and environmental assessment under NEPA.

## **BIOLOGICAL RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (g) (13) (C):** A description of all studies and surveys used to provide biological information about the project site, including seasonal surveys and copies of the California Department of Fish and Game's Natural Diversity Data Base Survey Forms, "California Native Species Field Survey Forms", and "California Natural Community Field Survey Forms", completed by the applicant. Include the dates and duration of the studies, methods used to complete the studies, and the names and qualifications of individuals conducting the studies.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment BIO-2:** Provide the CNDDDB records from the initial sensitive species search.

**Response:** A copy of the CNDDDB query results was mailed to Ms. Natasha Nelson on August 29, 2002. An additional copy of this document is provided below.

Full Condensed Report - Multiple Records per Page  
Calenergy

CYPRINODON MACULARIUS  
DESERT PUFFISH  
Element Code: AFCNB02060

—List Status—	—NDDB Element Ranks—	—Other Lists—
Federal: Endangered	Global: G1	CDFG Status:
State: Endangered	State: S1	

—Habitat Associations—  
General: DESERT PONDS, SPRINGS, MARSHES AND STREAMS IN SOUTHERN CALIFORNIA.  
Micro: CAN LIVE IN SALINITIES FROM FRESH WATER TO 68 PPT, CAN WITHSTAND TEMPS FROM 9 - 45 C & D.O. LEVELS DOWN TO 0.1 PPM.

Occurrence No. 2	Map Index:06065	—Dates Last Seen—	Lat/Long: 33°06'10" / 115°54'11"	Township: 12S
Occ Rank: Good		Element: 1994-05-18	UTM: Zone-11 N3663011 E602352	Range: 10E
Origin: Natural/Native occurrence		Site: 1994-05-18	Precision: SPECIFIC	Section: 27 Qtr XX
Presence: Presumed Extant			Symbol Type: POLYGON	Meridian: S
Trend: Increasing			Area: 611.1 ac	Elevation: -150

Main Source: NICOL, K. 1986 (PERS)  
Quad Summary: HARPERS WELL (3311518/030C)\*, KANE SPRING (3311517/030D)  
County Summary: IMPERIAL  
SNA Summary: San Sebastian Marsh  
Location: SAN FELIPE AND CARRIZO CREEKS, TRIBUTARY TO SALTON SEA.

—Comments—  
Distribution:  
Ecological: THIS IS ONE OF LAST NATURAL DESERT STREAMS IN CALIF. HYDROLOGICAL STUDIES NEEDED.  
Threat: TAMARISK, MOSQUITOFISH, MOLLIES, TILAPIA (WIPED OUT BY FLOOD IN 1987, BUT PRESENT AGAIN IN 1990)  
General: MANY OBS JUNE 1986 (MOSTLY JUVENILES). 49 CAUGHT SEPT 1989. 121 CAUGHT IN SAN FELIPE IN 1990. 58 MINNOW TRAPS, 224 CAPTURED 1993. 195 PUFFISH & 2 SAILFIN MOLLIES CAUGHT 1994. MANY SEEN BELOW HWY 86 BRIDGE ON 5/18/94.  
Owner/Manager: BLM, PVT, BOR

Occurrence No. 39	Map Index:30145	—Dates Last Seen—	Lat/Long: 33°10'23" / 115°37'50"	Township: 11S
Occ Rank: Unknown		Element: 1991-05-24	UTM: Zone-11 N3671119 E627690	Range: 13E
Origin: Natural/Native occurrence		Site: 1991-05-24	Precision: NON-SPECIFIC	Section: 32 Qtr E
Presence: Presumed Extant			Symbol Type: POLYGON	Meridian: S
Trend: Unknown			Area: 47.5 ac	Elevation: -230

Main Source: LAU, S. 1991 (OBS)  
Quad Summary: OBSIDIAN BUTTE (3311526/029B)  
County Summary: IMPERIAL  
SNA Summary:  
Location: MOUTH OF VAIL LATERAL 5 DRAIN AND SHORELINE POOL AT THE END OF MCKENDRY RD, SALTON SEA NATIONAL WILDLIFE REFUGE.

—Comments—  
Distribution: THE SHORELINE POOL MAPPED TO THE DESCRIPTION, NOT COORDINATES GIVEN (THE LOCATIONS DON'T MATCH).  
Ecological: AGRICULTURAL DRAIN WITH A FIRM SILTY SUBSTRATE AND MURKY WATER WITH LITTLE FLOW. LITTLE AQUATIC VEGETATION. A PORTION OF THE SALTON SEA ISOLATED FROM THE MAIN BODY. DRAIN WATER ALSO ENTERING HERE FROM THE SOUTH.  
Threat:  
General: 44 PUFFISH TRAPPED 5/24/91. 18 PUFFISH, 3 MOLLIES, 5 MUDSUCKERS AND 1 CRAYFISH CAPTURED, 1990.  
Owner/Manager: IMPERIAL CO IRR DIST, USFWS

Occurrence No. 40	Map Index:30148	—Dates Last Seen—	Lat/Long: 33°08'25" / 115°39'25"	Township: 12S
Occ Rank: Unknown		Element: 1991-05-16	UTM: Zone-11 N3667439 E625280	Range: 13E
Origin: Natural/Native occurrence		Site: 1991-05-16	Precision: NON-SPECIFIC	Section: 07 Qtr XX
Presence: Presumed Extant			Symbol Type: POLYGON	Meridian: S
Trend: Unknown			Area: 7.0 ac	Elevation: -230

Main Source: BOEHM, C. 1991 (OBS)  
Quad Summary: OBSIDIAN BUTTE (3311526/029B)  
County Summary: IMPERIAL  
SNA Summary:  
Location: UNNAMED AGRICULTURAL DRAIN BETWEEN THE VAIL LATERAL 7 & VAIL LATERAL 6 DRAINS ON THE SOUTHEAST SHORE OF THE SALTON SEA.

—Comments—  
Distribution:  
Ecological: SLOW FLOWING AGRICULTURAL DRAIN WITH A SOMEWHAT SOFT SAND SUBSTRATE AND LITTLE AQUATIC VEGETATION.  
Threat: THREATS INCLUDE EXOTIC SPECIES AND PESTICIDE RUN-OFF.  
General: 1 PUFFISH TRAPPED 5/16/91.  
Owner/Manager: IMPERIAL CO IRR DIST

Full Condensed Report - Multiple Records per Page  
Calenergy

CYPRINODON MACULARIUS (cont.)

DESERT PUFFISH

Element Code: AFCNB02060

—List Status—	—NDDB Element Ranks—	—Other Lists—
Federal: Endangered	Global: G1	CDFG Status:
State: Endangered	State: S1	

Occurrence No. 41      Map Index:30147      —Dates Last Seen—      Lat/Long: 33°09'43" / 115°38'22"      Township: 12S  
 Occ Rank: Unknown      Element: 1991-05-10      UTM: Zone-11 N3669884 E626871      Range: 13E  
 Origin: Natural/Native occurrence      Site: 1991-05-10      Precision: NON-SPECIFIC      Section: 05 Qtr N  
 Presence: Presumed Extant      Symbol Type: POLYGON      Meridian: S  
 Trend: Unknown      Area: 7.9 ac      Elevation: -230  
 Main Source: BOEHM, C. 1991 (OBS)  
 Quad Summary: OBSIDIAN BUTTE (3311526/029B)  
 County Summary: IMPERIAL  
 SNA Summary:  
 Location: MOUTH OF VAIL LATERAL 5-A DRAIN ON THE SOUTHEAST SHORE OF THE SALTON SEA, IMPERIAL CO.  
 —Comments—  
 Distribution:  
 Ecological: SHALLOW AGRICULTURAL DRAIN WITH A NARROW MOUTH TO THE SEA. SOFT MUDDY SUBSTRATE WITH SOME FILAMENTOUS ALGAE.  
 Threat: THREATS INCLUDE EXOTIC SPECIES AND PESTICIDE RUN-OFF.  
 General: 26 PUFFISH TRAPPED 5/10/91.  
 Owner/Manager: IMPERIAL CO IRR DIST

Occurrence No. 42      Map Index:30146      —Dates Last Seen—      Lat/Long: 33°09'44" / 115°38'53"      Township: 12S  
 Occ Rank: Unknown      Element: 1991-06-14      UTM: Zone-11 N3669891 E626075      Range: 13E  
 Origin: Natural/Native occurrence      Site: 1991-06-14      Precision: NON-SPECIFIC      Section: 06 Qtr NE  
 Presence: Presumed Extant      Symbol Type: POLYGON      Meridian: S  
 Trend: Unknown      Area: 8.7 ac      Elevation: -230  
 Main Source: BOEHM, C. 1991 (OBS)  
 Quad Summary: OBSIDIAN BUTTE (3311526/029B)  
 County Summary: IMPERIAL  
 SNA Summary:  
 Location: VAIL LATERAL 6 DRAIN ON THE SOUTHEAST SHORE OF THE SALTON SEA, IMPERIAL CO.  
 —Comments—  
 Distribution:  
 Ecological: AGRICULTURAL DRAIN WITH A FIRM SANDY, BARNACLE SUBSTRATE & HUGE MATS OF GRASSY AQUATIC VEGETATION. DRAIN HAD NO ACCESS TO THE SEA AT THE TIME OF THIS SURVEY.  
 Threat: THREATS INCLUDE EXOTIC SPECIES AND PESTICIDE RUN-OFF.  
 General: 2 PUFFISH TRAPPED 6/14/91.  
 Owner/Manager: IMPERIAL CO IRR DIST

Occurrence No. 49      Map Index:30171      —Dates Last Seen—      Lat/Long: 33°10'34" / 115°37'21"      Township: 11S  
 Occ Rank: Unknown      Element: 1991-05-17      UTM: Zone-11 N3671462 E628430      Range: 13E  
 Origin: Natural/Native occurrence      Site: 1991-05-17      Precision: SPECIFIC      Section: 33 Qtr NW  
 Presence: Presumed Extant      Symbol Type: POINT      Meridian: S  
 Trend: Unknown      Radius: 80 meters      Elevation: -230  
 Main Source: LAU, S. 1991 (OBS)  
 Quad Summary: NILAND (3311525/029A)  
 County Summary: IMPERIAL  
 SNA Summary:  
 Location: VAIL LATERAL 4-A DRAIN AT AN INSHORE POOL ABOVE THE MOUTH ON THE SOUTHEAST SHORE OF THE SALTON SEA, IMPERIAL CO.  
 —Comments—  
 Distribution:  
 Ecological: AN AGRICULTURAL DRAIN WITH A SANDY/MUDDY SUBSTRATE WITH BARNACLE COVER. SOME AQUATIC VEGETATION. CATTAIL STANDS AND SALT CEDAR SURROUND PONDS.  
 Threat: THREATS INCLUDE EXOTIC SPECIES AND PESTICIDE RUNOFF.  
 General: ONE PUFFISH COLLECTED 5/17/91.  
 Owner/Manager: UNKNOWN

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CYPRINODON MACULARIUS (cont.)  
DESERT PUPFISH  
Element Code: AFCNB02060

-----List Status-----NDDB Element Ranks-----Other Lists-----  
Federal: Endangered Global: G1 CDFG Status:  
State: Endangered State: S1

Occurrence No. 69 Map Index:26197 ---Dates Last Seen--- Lat/Long: 33°06'34" / 115°45'28" Township: 12S  
Occ Rank: Unknown Element: 1991-05-15 UTM: Zone-11 N3663930 E615916 Range: 12E  
Origin: Natural/Native occurrence Site: 1991-05-15 Precision: NON-SPECIFIC Section: 19 Qtr SE  
Presence: Presumed Extant Symbol Type: POLYGON Meridian: S  
Trend: Unknown Area: 101.1 ac Elevation: -230  
Main Source: LAU, S. 1991 (OBS)  
Quad Summary: KANE SPRING (3311517/030D)  
County Summary: IMPERIAL  
SNA Summary:  
Location: DRAINS BETWEEN BARTH AND POE LATERAL DRAINS, SOUTH SHORE OF SALTON SEA, IMPERIAL CO.  
-----Comments-----  
Distribution:  
Ecological: SOFT, MUDDY/SILTY SUBSTRATE. SOME TO LITTE AQUATIC VEGETATION. SOME SEDGES AND CATTAILS IN PATCHES.  
Threat: THREATS INCLUDE EXOTIC SPECIES AND PESTICIDE RUNOFF.  
General: ON 5/15/91, 8 PUPFISH CAPTURED IN TRIFOLIUM 19 DRAIN, 8 CAPTURED ONE DRAIN WEST OF LONE TREE WASH & 6 PUPFISH CAPTURED IN THE 3RD DRAIN WEST OF LONE TREE WASH.  
Owner/Manager: UNKNOWN

Occurrence No. 70 Map Index:26198 ---Dates Last Seen--- Lat/Long: 33°06'10" / 115°45'06" Township: 12S  
Occ Rank: Unknown Element: 1991-06-14 UTM: Zone-11 N3663168 E616483 Range: 12E  
Origin: Natural/Native occurrence Site: 1991-06-14 Precision: NON-SPECIFIC Section: 29 Qtr NW  
Presence: Presumed Extant Symbol Type: POLYGON Meridian: S  
Trend: Unknown Area: 9.5 ac Elevation: -230  
Main Source: LAU, S. 1991 (OBS)  
Quad Summary: KANE SPRING (3311517/030D)  
County Summary: IMPERIAL  
SNA Summary:  
Location: POE LATERAL DRAIN ON THE SOUTHERN SHORE OF THE SALTON SEA, IMPERIAL CO.  
-----Comments-----  
Distribution:  
Ecological: FAIRLY DEEP AGRICULTURAL DRAIN WITH A SOFT MUDDY/SANDY SUBSTRATE. BANKS WERE RECENTLY CLEARED OF VEGETATION.  
Threat: LITTLE AQUATIC VEGETATION.  
General: 11 PUPFISH CAPTURED 6/14/91. A PREVIOUS TRAPSET CAUGHT NO PUPFISH.  
Owner/Manager: UNKNOWN

Occurrence No. 71 Map Index:26192 ---Dates Last Seen--- Lat/Long: 33°09'25" / 115°48'14" Township: 12S  
Occ Rank: Unknown Element: 1991-06-14 UTM: Zone-11 N3669142 E611534 Range: 11E  
Origin: Natural/Native occurrence Site: 1991-06-14 Precision: NON-SPECIFIC Section: 02 Qtr NW  
Presence: Presumed Extant Symbol Type: POLYGON Meridian: S  
Trend: Unknown Area: 9.4 ac Elevation: -230  
Main Source: LAU, S. 1991 (OBS)  
Quad Summary: KANE SPRING NE (3311527/030A)  
County Summary: IMPERIAL  
SNA Summary:  
Location: TRIFOLIUM 23 NORTH DRAIN ON THE SOUTHWEST SHORE OF THE SALTON SEA, IMPERIAL CO.  
-----Comments-----  
Distribution:  
Ecological: AGRICULTURAL DRAIN WITH A FIRM SANDY SUBSTRATE AND FILAMENTOUS ALGAE. CATTAIL AND SEDGES ARE GROWING AROUND BORDERS. NO SEA ACCESS.  
Threat: THREATS INCLUDE EXOTIC SPECIES AND PESTICIDE RUNOFF.  
General: 2 PUPFISH CAPTURED 6/14/91.  
Owner/Manager: UNKNOWN

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## CYPRINODON MACULARIUS (cont.)

DESERT PUFFISH

Element Code: AFCNB02060

—List Status—	—NDDB Element Ranks—	—Other Lists—
Federal: Endangered	Global: G1	CDPG Status:
State: Endangered	State: S1	

Occurrence No. 72      Map Index:26193      —Dates Last Seen—      Lat/Long: 33°09'18" / 115°47'41"      Township: 12S  
 Occ Rank: Unknown      Element: 1991-06-14      UTM: Zone-11 N3668914 E612396      Range: 11E  
 Origin: Natural/Native occurrence      Site: 1991-06-14      Precision: NON-SPECIFIC      Section: 02 Qtr NW  
 Presence: Presumed Extant      Symbol Type: POLYGON      Meridian: S  
 Trend: Unknown      Area: 32.9 ac      Elevation: -230  
 Main Source: LAU, S. 1991 (OBS)  
 Quad Summary: KANE SPRING NE (3311527/030A)  
 County Summary: IMPERIAL  
 SNA Summary:  
 Location: INSHORE POOL IMMEDIATELY EAST OF THE TRIFOLIUM 23 NORTH DRAIN ON THE SOUTHWEST SHORE OF THE SALTON SEA, IMPERIAL CO.

—Comments—  
 Distribution:  
 Ecological: INSHORE POOL WITH SOFT, SANDY/SILTY SUBSTRATE AND FILAMENTOUS ALGAE. POOL SURROUNDED BY SALT CEDAR, SEDGES AND CATTAILS.  
 Threat: THREATS INCLUDE EXOTIC SPECIES.  
 General: UNKNOWN NUMBER OF PUFFISH WERE NETTED AND POSITIVELY IDENTIFIED.  
 Owner/Manager: UNKNOWN

Occurrence No. 73      Map Index:26194      —Dates Last Seen—      Lat/Long: 33°08'52" / 115°47'19"      Township: 12S  
 Occ Rank: Unknown      Element: 1991-06-07      UTM: Zone-11 N3668130 E612982      Range: 11E  
 Origin: Natural/Native occurrence      Site: 1991-06-07      Precision: NON-SPECIFIC      Section: 11 Qtr NE  
 Presence: Presumed Extant      Symbol Type: POLYGON      Meridian: S  
 Trend: Unknown      Area: 25.0 ac      Elevation: -230  
 Main Source: BOEHM, C. 1991 (OBS)  
 Quad Summary: KANE SPRING NE (3311527/030A)  
 County Summary: IMPERIAL  
 SNA Summary:  
 Location: MOUTH OF TRIFOLIUM 23 DRAIN AND THE NEAREST INSHORE POOL ON THE SOUTHWEST SHORE OF THE SALTON SEA, IMPERIAL CO.

—Comments—  
 Distribution:  
 Ecological: THE DRAIN HAD CLEAR, SLOW-MOVING WATER WITH BARNACLE AND SAND SUBSTRATE AND SALT CEDAR AND SEDGES ALONG THE BANKS. THE POOL WAS SHALLOW WITH A FIRM, SILTY SUBSTRATE COVERED WITH FINE ALGAE, AND SURROUNDED BY SALT CEDAR.  
 Threat: THREATS INCLUDE EXOTIC SPECIES AND PESTICIDE RUNOFF.  
 General: 13 PUFFISH CAPTURED AT THE MOUTH OF TRIFOLIUM 23 DRAIN ON 5/15/91, & 4 CAPTURED IN THE SHORELINE POOL ON 6/07/91.  
 Owner/Manager: UNKNOWN

Occurrence No. 74      Map Index:26195      —Dates Last Seen—      Lat/Long: 33°08'22" / 115°47'31"      Township: 12S  
 Occ Rank: Unknown      Element: 1991-05-16      UTM: Zone-11 N3667192 E612668      Range: 11E  
 Origin: Natural/Native occurrence      Site: 1991-05-16      Precision: NON-SPECIFIC      Section: 11 Qtr SE  
 Presence: Presumed Extant      Symbol Type: POLYGON      Meridian: S  
 Trend: Unknown      Area: 22.0 ac      Elevation: -230  
 Main Source: BOEHM, C. 1991 (OBS)  
 Quad Summary: KANE SPRING NE (3311527/030A)  
 County Summary: IMPERIAL  
 SNA Summary:  
 Location: MOUTH OF SAN FELIPE WASH DRAIN ON THE SOUTHWEST SHORE OF THE SALTON SEA, IMPERIAL CO.

—Comments—  
 Distribution:  
 Ecological: AGRICULTURAL DRAIN WITH A FIRM, SILTY SUBSTRATE, MURKY WATER AND LITTLE COVER.  
 Threat: THREATS INCLUDE EXOTIC SPECIES AND PESTICIDE RUNOFF.  
 General: 5 PUFFISH CAPTURED 5/16/91.  
 Owner/Manager: UNKNOWN

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CYPRINODON MACULARIUS (cont.)  
DESERT PUFFISH  
Element Code: AFCNB02060

List Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G1	CDFG Status:
State: Endangered	State: S1	

Occurrence No. 75      Map Index: 26196      —Dates Last Seen—      Lat/Long: 33°07'38" / 115°46'48"      Township: 12S  
Occ Rank: Unknown      Element: 1991-06-07      UTM: Zone-11 N3665865 E613798      Range: 11E  
Origin: Natural/Native occurrence      Site: 1991-06-07      Precision: NON-SPECIFIC      Section: 13 Qtr NW  
Presence: Presumed Extant      Symbol Type: POLYGON      Meridian: S  
Trend: Unknown      Area: 13.2 ac      Elevation: -230  
Main Source: BOEHM, C. 1991 (OBS)  
Quad Summary: KANE SPRING NE (3311527/030A)  
County Summary: IMPERIAL  
SNA Summary:  
Location: INSHORE POOL EAST OF TRIFOLIUM 22 DRAIN ON THE SOUTHWEST SHORE OF THE SALTON SEA, IMPERIAL CO.  
Comments:  
Distribution:  
Ecological: UNIFORMLY SHALLOW INSHORE POOL WITH SOFT, MUDDY SUBSTRATE AND LITTLE AQUATIC VEGETATION.  
Threat: THREATS INCLUDE EXOTIC SPECIES AND PESTICIDE RUNOFF.  
General: 6 PUFFISH CAPTURED 6/07/91.  
Owner/Manager: UNKNOWN

Occurrence No. 76      Map Index: 37911      —Dates Last Seen—      Lat/Long: 33°11'07" / 115°35'46"      Township: 11S  
Occ Rank: Unknown      Element: 1986-06-19      UTM: Zone-11 N3672520 E630881      Range: 13E  
Origin: Natural/Native occurrence      Site: 1986-06-19      Precision: SPECIFIC      Section: 26 Qtr NW  
Presence: Presumed Extant      Symbol Type: POLYGON      Meridian: S  
Trend: Unknown      Area: 16.2 ac      Elevation: -226  
Main Source: SMJ BIOLOGICAL CONSULTANTS 1986 (LIT)  
Quad Summary: NILAND (3311525/029A)  
County Summary: IMPERIAL  
SNA Summary:  
Location: VAIL 3 DRAIN, IMPERIAL STATE WILDLIFE AREA, 5.8 MILES SW OF NILAND, SE SALTON SEA AREA.  
Comments:  
Distribution: IRRIGATION DRAIN BETWEEN IMPERIAL STATE WILDLIFE AREA AND SALTON SEA NATIONAL WILDLIFE REFUGE.  
Ecological:  
Threat:  
General: TRAPPING DONE APRIL, MAY & JUNE 1986, TOTAL OF 2 CAPTURED.  
Owner/Manager: DFG-IMPERIAL WA

California Department of Fish and Game  
Natural Diversity Data Base

Full Condensed Report - Multiple Records per Page  
Calenergy

BUFO ALVARIUS

COLORADO RIVER TOAD

Element Code: AAABB01010

-----List Status-----

Federal: None

State: None

-----NDDB Element Ranks-----

Global: G5

State: SH

-----Other Lists-----

CDFG Status: SC

-----Habitat Associations-----

General: BREEDS IN TEMPORARY POOLS & IRRIGATION DITCHES ALONG THE COLORADO RIVER AND SOUTHERN IMPERIAL VALLEY.

Micro: None for this Element

Occurrence No. 1      Map Index: 43419      ---Dates Last Seen---      Lat/Long: 33°14'26" / 115°31'02"      Township: 11S  
Occ Rank: None      Element: 1916-05-13      UTM: Zone-11 N3678755 E638121      Range: 14E  
Origin: Natural/Native occurrence      Site: 1916-05-13      Precision: NON-SPECIFIC      Section: 04 Qtr XX  
Presence: Extirpated      Symbol Type: POINT      Meridian: S  
Trend: Unknown      Radius: 1 mile      Elevation: -125  
Main Source: CAS HERPETOLOGICAL HOLDINGS 2000 (MUS)  
Quad Summary: NILAND (3311525/029A)\*, WISTER (3311535/044D)  
County Summary: IMPERIAL  
SNA Summary:  
Location: NILAND.  
-----Comments-----  
Distribution:  
Ecological:  
Threat:  
General: COLLECTION BY J. VAN DENBURGH, 13 MAY 1916, CAS #41697. M. JENNINGS & M. HAYES CONSIDER THIS POPULATION  
EXTIRPATED.  
Owner/Manager: UNKNOWN

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*RALLUS LONGIROSTRIS YUMANENSIS*

YUMA CLAPPER RAIL

Element Code: ABNME0501A

-----List Status-----

Federal: Endangered

State: Threatened

-----NDDB Element Ranks-----

Global: G5T3

State: S1

-----Other Lists-----

CDFG Status:

-----Habitat Associations-----

General: NESTS IN FRESH-WATER MARSHES ALONG THE COLORADO RIVER AND ALONG THE SOUTH AND EAST ENDS OF THE SALTON SEA.

Micro: PREFERS STANDS OF CATTAILS AND TULE DISSECTED BY NARROW CHANNELS OF FLOWING WATER; PRINCIPLE FOOD IS CRAYFISH.

Occurrence No. 31      Map Index:06196

Occ Rank: Unknown

Origin: Natural/Native occurrence

Presence: Presumed Extant

Trend: Unknown

Main Source: POWELL, R. 1985 (PERS)

Quad Summary: CALIPATRIA SW (3311516/029C)\*, OBSIDIAN BUTTE (3311526/029B)

County Summary: IMPERIAL

SNA Summary: Mouth of New River

Location: SALTON SEA NATIONAL WILDLIFE REFUGE AT MOUTH OF NEW RIVER, S END OF SALTON SEA.

-----Comments-----

Distribution:

Ecological:

Threat:

General: TOTAL OF 49 RAILS ESTIMATED IN 1978, FROM TWO SEPARATE MARSH AREAS.

Owner/Manager: USFWS-SALTON SEA NWR

-----Dates Last Seen-----

Element: 1978-XX-XX

Site: 1978-XX-XX

Lat/Long: 33°06'46" / 115°41'29"

UTM: Zone-11 N3664368 E622094

Precision: SPECIFIC

Symbol Type: POLYGON

Area: 3,377.9 ac

Township: 12S

Range: 12E

Section: 23 Qtr XX

Meridian: S

Elevation: 235 ft

Occurrence No. 32      Map Index:06249

Occ Rank: Unknown

Origin: Natural/Native occurrence

Presence: Presumed Extant

Trend: Unknown

Main Source: POWELL, R. 1985 (PERS)

Quad Summary: NILAND (3311525/029A)

County Summary: IMPERIAL

SNA Summary: Mullet Island/East Shore

Location: SALTON SEA NATIONAL WILDLIFE REFUGE AT ROCK HILL, S END OF THE SALTON SEA.

-----Comments-----

Distribution:

Ecological:

Threat:

General: TWO RAILS ESTIMATED IN 1978.

Owner/Manager: USFWS-SALTON SEA NWR

-----Dates Last Seen-----

Element: 1978-XX-XX

Site: 1978-XX-XX

Lat/Long: 33°10'59" / 115°37'20"

UTM: Zone-11 N3672256 E628424

Precision: NON-SPECIFIC

Symbol Type: POINT

Radius: 1/10 mile

Township: 11S

Range: 13E

Section: 28 Qtr XX

Meridian: S

Elevation: 235 ft

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STERNA NILOTICA VANROSSEMI  
VAN ROSSEM'S GULL-BILLED TERN  
Element Code: ABNNM08010

—List Status— NDDB Element Ranks— Other Lists—  
Federal: None Global: G5T1 CDFG Status: SC  
State: None State: S1

—Habitat Associations—

General: (NESTING COLONY) ONLY KNOWN BREEDING COLONY LOCATED AT SOUTHEAST END OF SALTON SEA.  
Micro: NEST ON LOW, SANDY ISLETS. KNOWN TO FEED ON FISHES AT MOUTH OF COLORADO RIVER AND ON GRASSHOPPERS IN ALFALFA FIELDS

Occurrence No. 1 Map Index:22124 —Dates Last Seen— Lat/Long: 33°08'34" / 115°47'03" Township: 12S  
Occ Rank: Fair Element: 1992-06-XX UTM: Zone-11 N3667569 E613405 Range: 11E  
Origin: Natural/Native occurrence Site: 1992-06-XX Precision: NON-SPECIFIC Section: 12 Qtr NW  
Presence: Presumed Extant Symbol Type: POINT Meridian: S  
Trend: Unknown Radius: 1/5 mile Elevation: -230  
Main Source: MOLINA, K. 1992 (OBS)  
Quad Summary: KANE SPRING NE (3311527/030A)  
County Summary: IMPERIAL  
SNA Summary:  
Location: JUST NORTH OF THE SAN FELIPE WASH OUTFLOW INTO THE SALTON SEA, 10 MILES NW OF WESTMORELAND.  
—Comments—  
Distribution: THE NESTING COLONY IS LIMITED TO A SEVERELY ERODED EARTHEN LEVEE WHICH IS DEPENDENT UPON A CRITICAL SEA LEVEL THAT KEEPS THE COLONY ISOLATED FROM THE MAINLAND AND TERRESTRIAL PREDATORS.  
Ecological: THE ERODED EARTHEN LEVEE UPON WHICH THE COLONY IS LOCATED IS 1-1.5 METERS HIGH AND IS VEGETATED BY A FEW SUAEDA SHRUBS.  
Threat: POTENTIAL THREATS INCLUDE MAMMALIAN PREDATORS, FLOODING, AND HUMAN DISTURBANCE.  
General: TERNS WERE OBSERVED AT THE ELMORE COLONY SITE FROM MAY-JUNE; 150 ADULTS AND AT LEAST 2 JUVENILES OBSERVED.  
Owner/Manager: UNKNOWN

Occurrence No. 2 Map Index:22125 —Dates Last Seen— Lat/Long: 33°12'03" / 115°35'24" Township: 11S  
Occ Rank: Fair Element: 1994-08-XX UTM: Zone-11 N3674232 E631428 Range: 13E  
Origin: Natural/Native occurrence Site: 1994-08-XX Precision: NON-SPECIFIC Section: 23 Qtr NW  
Presence: Presumed Extant Symbol Type: POINT Meridian: S  
Trend: Unknown Radius: 1/5 mile Elevation: -235  
Main Source: MOLINA, K. 1992 (OBS)  
Quad Summary: NILAND (3311525/029A)  
County Summary: IMPERIAL  
SNA Summary:  
Location: JUST NORTH OF THE ALAMO RIVER AND IMPERIAL WILDLIFE AREA, EAST OF THE SALTON SEA, 4.5 MILES SW OF NILAND.  
—Comments—  
Distribution: COLONY SITE IS LOCATED WITHIN A FLOODED IMPOUNDMENT WHICH CONTAINS SEVERAL REMNANT EARTHEN LEVEES THAT SERVE AS THE NESTING SUBSTRATE.  
Ecological: HABITAT CONSISTS OF REMNANT EARTHEN LEVEES WITHIN AN IMPOUNDMENT THAT ARE COMPLETELY DEVOID OF VEGETATION.  
Threat: POTENTIAL THREATS INCLUDE MAMMALIAN PREDATORS AND HUMAN DISTURBANCE.  
General: MORTON BAY NESTING COLONY WAS OBSERVED FROM MAY-JULY 1992; 50 ADULTS AND AT LEAST 3 JUVENILES OBSERVED. ESTIMATED 60 ADULTS AND 10 JUVENILES OBSERVED DURING MARCH-JULY 1993. ESTIMATED 42 ADULTS AND 15 JUVENILES OBSERVED DURING MAR-AUG 1994.  
Owner/Manager: IMPERIAL CO IRR DIST

Occurrence No. 3 Map Index:06266 —Dates Last Seen— Lat/Long: 33°13'30" / 115°36'28" Township: 11S  
Occ Rank: Excellent Element: 1994-08-XX UTM: Zone-11 N3676933 E629723 Range: 13E  
Origin: Natural/Native occurrence Site: 1994-08-XX Precision: SPECIFIC Section: 10 Qtr SW  
Presence: Presumed Extant Symbol Type: POLYGON Meridian: S  
Trend: Unknown Area: 7.6 ac Elevation: -235  
Main Source: MOLINA, K. 1993 (OBS)  
Quad Summary: NILAND (3311525/029A)  
County Summary: IMPERIAL  
SNA Summary: Mullet Island/East Shore  
Location: MULLET ISLAND, IN THE SALTON SEA, 5 MILES WSW OF NILAND.  
—Comments—  
Distribution: COLONY ESTABLISHES AT THE SE POINT AT THE SHORELINE.  
Ecological: SUBSTRATE IS BARNACLE DEBRIS AND SMALL STONES WITH A FEW PROSTRATE HALOPHYTIC FLORAL SPECIES.  
Threat: MAIN THREAT IS HUMAN DISTURBANCE - SITE IS USED AS AN ANCHORAGE FOR SPORTFISHING BOATS.  
General: ESTIMATED 24 ADULTS AND 12 JUVENILES OBSERVED AT THIS COLONY SITE DURING MAY-JULY 1993. ESTIMATED 70 ADULTS AND ~15 JUVENILES OBSERVED DURING MAR-AUG 1994.  
Owner/Manager: IMPERIAL CO IRR DIST

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STERNA NILOTICA VANROSSEMI (cont.)  
VAN ROSSEM'S GULL-BILLED TERN  
Element Code: ABNNM08010

-----List Status-----NDDB Element Ranks-----Other Lists-----  
Federal: None Global: GST1 CDFG Status: SC  
State: None State: S1

Occurrence No. 5 Map Index:25147 ---Dates Last Seen--- Lat/Long: 33°10'30" / 115°38'26" Township: 11S  
Occ Rank: Poor Element: 1994-08-XX UTM: Zone-11 N3671322 E626757 Range: 13E  
Origin: Natural/Native occurrence Site: 1994-08-XX Precision: NON-SPECIFIC Section: 32 Qtr NW  
Presence: Presumed Extant Symbol Type: POINT Meridian: S  
Trend: Unknown Radius: 1/5 mile Elevation: -235  
Main Source: MOLINA, K. 1993 (OBS)  
Quad Summary: OBSIDIAN BUTTE (3311526/029B)  
County Summary: IMPERIAL  
SNA Summary:  
Location: NW EDGE OF OBSIDIAN BUTTE, 6 MILES SW OF NILAND.  
-----Comments-----  
Distribution:  
Ecological: NEST SITE IS A SAND AND BARNACLE DEBRIS BEACH ISOLATED BY SEASONAL FLOODING; SCATTERED WITH A FEW SUAEDA SHRUBS.  
Threat: MAIN THREATS ARE HUMAN DISTURBANCE AND MAMMALIAN PREDATORS.  
General: ESTIMATED 40 ADULTS AND 40 JUVENILES OBSERVED DURING MAY-JULY 1993. 14 ADULTS OBSERVED NESTING DURING MAR-AUG 1994; NESTING SUCCESS UNKNOWN.  
Owner/Manager: IMPERIAL CO IRR DIST

Occurrence No. 6 Map Index:40255 ---Dates Last Seen--- Lat/Long: 33°10'54" / 115°37'11" Township: 11S  
Occ Rank: Fair Element: 1998-08-XX UTM: Zone-11 N3672094 E628663 Range: 13E  
Origin: Natural/Native occurrence Site: 1998-08-XX Precision: NON-SPECIFIC Section: 28 Qtr SE  
Presence: Presumed Extant Symbol Type: POINT Meridian: S  
Trend: Unknown Radius: 1/5 mile Elevation: -230  
Main Source: MOLINA, K. 1998 (OBS)  
Quad Summary: NILAND (3311525/029A)  
County Summary: IMPERIAL  
SNA Summary:  
Location: JUST SE OF ROCK HILL, SALTON SEA NATIONAL WILDLIFE REFUGE, 7 MILES SW OF NILAND  
-----Comments-----  
Distribution:  
Ecological: HABITAT CONSISTS OF AN EARTHEN IMPOUNDMENT WITH EARTHEN ISLANDS.  
Threat: THREATENED BY VEHICULAR TRAFFIC, RECREATION, AND POTENTIAL COLONIZATION BY GULLS.  
General: ESTIMATED 240 ADULTS AND LESS THAN 100 JUVENILES OBSERVED DURING APR-AUG 1998.  
Owner/Manager: USFWS-SALTON SEA NWR

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STERNA CASPIA  
CASPIAN TERN

Element Code: ABNNM08020

——List Status——

Federal: None  
State: None

——NDDB Element Ranks——

Global: G5  
State: S4

——Other Lists——

CDFG Status:

——Habitat Associations——

General: (NESTING COLONY) NESTS IN SMALL COLONIES INLAND AND ALONG THE COAST.

Micro: INLAND FRESH-WATER LAKES AND MARSHES; ALSO, BRACKISH OR SALT WATERS OF ESTUARIES AND BAYS.

Occurrence No. 3      Map Index: 40255      —Dates Last Seen—      Lat/Long: 33°10'54" / 115°37'11"      Township: 11S  
Occ Rank: Fair      Element: 1998-08-XX      UTM: Zone-11 N3672094 E628663      Range: 13E  
Origin: Natural/Native occurrence      Site: 1998-08-XX      Precision: NON-SPECIFIC      Section: 28 Qtr SE  
Presence: Presumed Extant      Symbol Type: POINT      Meridian: S  
Trend: Unknown      Radius: 1/5 mile      Elevation: -230  
Main Source: MOLINA, K. 1998 (OBS)  
Quad Summary: NILAND (3311525/029A)  
County Summary: IMPERIAL  
SNA Summary:  
Location: JUST SE OF ROCK HILL, SALTON SEA NATIONAL WILDLIFE REFUGE, 7 MILES SW OF NILAND.  
——Comments——  
Distribution:  
Ecological: HABITAT CONSISTS OF AN EARTHEN IMPOUNDMENT WITH EARTHEN ISLANDS.  
Threat: THREATENED BY VEHICULAR TRAFFIC, RECREATION, AND POTENTIAL COLONIZATION BY GULLS.  
General: ESTIMATED 1400 ADULTS AND 200 JUVENILES OBSERVED DURING APR-AUG 1998.  
Owner/Manager: USFWS-SALTON SEA NWR

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RYNCHOPS NIGER

BLACK SKIMMER

Element Code: ABNNM14010

—List Status—

Federal: None

State: None

—NDDB Element Ranks—

Global: G5

State: S1S3

—Other Lists—

CDFG Status: SC

—Habitat Associations—

General: (NESTING COLONY) NESTS ALONG THE NORTH & SOUTH ENDS OF THE SALTON SEA; ALSO, ON SALT POND DIKES OF SOUTH SAN DIEGO BAY.  
Micro: NESTS ON GRAVEL BARS, LOW ISLETS, AND SANDY BEACHES, IN UNVEGETATED SITES. NESTING COLONIES USUALLY LESS THAN 200 PAIRS.

Occurrence No. 1      Map Index:06198      —Dates Last Seen—      Lat/Long: 33°07'25" / 115°41'32"      Township: 12S  
Occ Rank: Unknown      Element: 1975-07-12      UTM: Zone-11 N3665559 E622003      Range: 12E  
Origin: Natural/Native occurrence      Site: 1975-07-12      Precision: NON-SPECIFIC      Section: 14 Qtr S  
Presence: Presumed Extant      Symbol Type: POINT      Meridian: S  
Trend: Unknown      Radius: 1 mile      Elevation: -220  
Main Source: TILLER, D. 1975 (PERS)  
Quad Summary: CALIPATRIA SW (3311516/029C)\*, OBSIDIAN BUTTE (3311526/029B)  
County Summary: IMPERIAL  
SNA Summary: Mouth of New River  
Location: EIGHT MI NW OF WESTMORLAND.  
—Comments—  
Distribution:  
Ecological: HABITAT IS RIVER DELTA SHORELINE, GRAVEL BEACH, AND SALT CEDAR.  
Threat:  
General: ADULTS AND ONE OFFSPRING SEEN; FROM NORTH AMERICAN NEST RECORD CARD PROGRAM.  
Owner/Manager: UNKNOWN

Occurrence No. 2      Map Index:06266      —Dates Last Seen—      Lat/Long: 33°13'30" / 115°36'28"      Township: 11S  
Occ Rank: Unknown      Element: 1973-08-15      UTM: Zone-11 N3676933 E629723      Range: 13E  
Origin: Natural/Native occurrence      Site: 1973-08-15      Precision: SPECIFIC      Section: 10 Qtr SW  
Presence: Presumed Extant      Symbol Type: POLYGON      Meridian: S  
Trend: Unknown      Area: 7.6 ac      Elevation: -235  
Main Source: TILLER, D. 1973 (PERS)  
Quad Summary: NILAND (3311525/029A)  
County Summary: IMPERIAL  
SNA Summary: Mullet Island/East Shore  
Location: MULLET ISLAND.  
—Comments—  
Distribution:  
Ecological: HABITAT IS ALKALI MUDFLAT ON A SMALL, EXPOSED ISLAND IN SALT LAKE.  
Threat:  
General: TWO EGGS AND ADULTS SEEN AT NEST; FROM NORTH AMERICAN NEST RECORD CARD PROGRAM.  
Owner/Manager: UNKNOWN

Occurrence No. 4      Map Index:40255      —Dates Last Seen—      Lat/Long: 33°10'54" / 115°37'11"      Township: 11S  
Occ Rank: Fair      Element: 1998-08-XX      UTM: Zone-11 N3672094 E628663      Range: 13E  
Origin: Natural/Native occurrence      Site: 1998-08-XX      Precision: NON-SPECIFIC      Section: 28 Qtr SE  
Presence: Presumed Extant      Symbol Type: POINT      Meridian: S  
Trend: Unknown      Radius: 1/5 mile      Elevation: -230  
Main Source: MOLINA, K. 1998 (OBS)  
Quad Summary: NILAND (3311525/029A)  
County Summary: IMPERIAL  
SNA Summary:  
Location: JUST SE OF ROCK HILL, SALTON SEA NATIONAL WILDLIFE REFUGE, 7 MILES SW OF NILAND.  
—Comments—  
Distribution:  
Ecological: HABITAT CONSISTS OF AN EARTHEN IMPOUNDMENT WITH EARTHEN ISLANDS.  
Threat: THREATENED BY VEHICULAR TRAFFIC, RECREATION, AND POTENTIAL COLONIZATION BY GULLS.  
General: ESTIMATED 500 ADULTS AND 200 JUVENILES OBSERVED DURING APR-AUG 1998.  
Owner/Manager: USFWS-SALTON SEA NWR

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EMPIDONAX TRILLII  
WILLOW FLYCATCHER  
Element Code: ABPAE33040

List Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G5	CDFG Status:
State: Endangered	State: S1S2	

Habitat Associations  
General: (NESTING) INHABITS EXTENSIVE THICKETS OF LOW, DENSE WILLOWS ON EDGE OF WET MEADOWS, PONDS, OR BACKWATERS; 2000-8000 ELEV  
Micro: REQUIRE DENSE WILLOW THICKETS FOR NESTING/ROOSTING. LOW, EXPOSED BRANCHES ARE USED FOR SINGING POSTS/HUNTING PERCHES.

Occurrence No. 6	Map Index:06286	—Dates Last Seen—	Lat/Long: 33°14'11" / 115°33'49"	Township: 11S
Occ Rank: Unknown		Element: 1952-10-05	UTM: Zone-11 N3678220 E633831	Range: 13E
Origin: Natural/Native occurrence		Site: 1952-10-05	Precision: NON-SPECIFIC	Section: 01 Qtr SE
Presence: Presumed Extant			Symbol Type: POINT	Meridian: S
Trend: Unknown			Radius: 1/5 mile	Elevation: -210
Main Source: BUREAU OF LAND MANAGEMENT 1980 (PERS)				
Quad Summary: NILAND (3311525/029A)				
County Summary: IMPERIAL				
SNA Summary:				
Location: 3 MI W OF NILAND.				
—Comments—				
Distribution:				
Ecological:				
Threat:				
General: SBCM #S-1924.				
Owner/Manager: UNKNOWN				

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*POLIOPTILA MELANURA*  
BLACK-TAILED GNATCATCHER  
Element Code: ABPEJ08030

List Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G5	CDFG Status:
State: None	State: S4	

Habitat Associations

General: INHABITS PRIMARILY WOODED DESERT WASH HABITATS; ALSO OCCURS IN DESERT SCRUB HABITAT, ESPECIALLY IN WINTER.  
Micro: NESTS IN DESERT WASH CONTAINING MESQUITE, PALOVERDE, IRONWOOD, ACACIA; ABSENT FROM AREAS WHERE SALT CEDAR INTRODUCED.

Occurrence No. 7	Map Index:06273	Dates Last Seen—	Lat/Long: 33°11'41" / 115°35'30"	Township: 11S
Occ Rank: Unknown		Element: 1968-10-14	UTM: Zone-11 N3673565 E631279	Range: 13E
Origin: Natural/Native occurrence		Site: 1968-10-14	Precision: NON-SPECIFIC	Section: 23 Qtr SW
Presence: Presumed Extant			Symbol Type: POINT	Meridian: S
Trend: Unknown			Radius: 1 mile	Elevation: -200
Main Source: BUREAU OF LAND MANAGEMENT 1980 (PERS)				
Quad Summary: NILAND (3311525/029A)				
County Summary: IMPERIAL				
SNA Summary:				
Location: WEST POND, IMPERIAL WATERFOWL MANAGEMENT AREA.				
Comments—				
Distribution:				
Ecological:				
Threat:				
General: SBCM SPECIMEN #S-4156.				
Owner/Manager: DFG-IMPERIAL WA				

Occurrence No. 8	Map Index:06301	Dates Last Seen—	Lat/Long: 33°07'46" / 115°30'45"	Township: 12S
Occ Rank: Unknown		Element: 1922-04-02	UTM: Zone-11 N3666429 E638762	Range: 14E
Origin: Natural/Native occurrence		Site: 1922-04-02	Precision: NON-SPECIFIC	Section: XX Qtr XX
Presence: Presumed Extant			Symbol Type: POINT	Meridian: S
Trend: Unknown			Radius: 1 mile	Elevation: -180
Main Source: BUREAU OF LAND MANAGEMENT 1980 (PERS)				
Quad Summary: NILAND (3311525/029A)*, WIEST (3311514/028C), WESTMORLAND (3311515/029D), IRIS (3311524/028B)				
County Summary: IMPERIAL				
SNA Summary:				
Location: CALIPATRIA.				
Comments—				
Distribution:				
Ecological:				
Threat:				
General: LACM SPECIMEN #4742.				
Owner/Manager: UNKNOWN				

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TOXOSTOMA CRISSALE  
CRISSAL THRASHER  
Element Code: ABPBK06090

—List Status—	—NDDB Element Ranks—	—Other Lists—
Federal: None	Global: G5	CDFG Status: SC
State: None	State: S3	

—Habitat Associations—

General: RESIDENT OF SOUTHEASTERN DESERTS IN DESERT RIPARIAN AND DESERT WASH HABITATS.

Micro: NESTS IN DENSE VEG ALONG STREAMS/WASHES; MESQUITE, SCREWBEAN MESQUITE, IRONWOOD, CATCLAW, ACACIA, ARROWWEED, WILLOW.

Occurrence No. 21	Map Index:06273	—Dates Last Seen—	Lat/Long: 33°11'41" / 115°35'30"	Township: 11S
Occ Rank: Unknown		Element: 1969-10-04	UTM: Zone-11 N3673565 E631279	Range: 13E
Origin: Natural/Native occurrence		Site: 1969-10-04	Precision: NON-SPECIFIC	Section: 23 Qtr SW
Presence: Presumed Extant			Symbol Type: POINT	Meridian: S
Trend: Unknown			Radius: 1 mile	Elevation: -200
Main Source: BUREAU OF LAND MANAGEMENT 1980 (PERS)				
Quad Summary: NILAND (3311525/029A)				
County Summary: IMPERIAL				
SNA Summary:				
Location: WEST POND, IMPERIAL VALLEY, 9.5 MI SW OF NILAND.				
—Comments—				
Distribution:				
Ecological:				
Threat:				
General: #S-4510 SBCM (MUS).				
Owner/Manager: UNKNOWN				

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*TOXOSTOMA LECONTEI*

LE CONTE'S THRASHER

Element Code: ABPBK06100

-----List Status-----

Federal: None

State: None

-----NDDB Element Ranks-----

Global: G4

State: S3

-----Other Lists-----

CDFG Status: SC

-----Habitat Associations-----

General: DESERT RESIDENT; PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.  
Micro: COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.

Occurrence No. 32      Map Index:06074      ---Dates Last Seen---      Lat/Long: 33°09'28" / 115°53'40"      Township: 12S  
Occ Rank: Unknown      Element: 1933-12-08      UTM: Zone-11 N3669131 E603097      Range: 10E  
Origin: Natural/Native occurrence      Site: 1933-12-08      Precision: NON-SPECIFIC      Section: 02 Qtr NE  
Presence: Presumed Extant      Symbol Type: POINT      Meridian: S  
Trend: Unknown      Radius: 1 mile      Elevation: -25  
Main Source: BUREAU OF LAND MANAGEMENT 1980 (LIT)  
Quad Summary: KANE SPRING NW (3311528/030B)  
County Summary: IMPERIAL  
SNA Summary:  
Location: 5 MI NE KANE SPRING.  
-----Comments-----  
Distribution:  
Ecological:  
Threat:  
General: LACM SPECIMEN #18214.  
Owner/Manager: UNKNOWN

Occurrence No. 33      Map Index:06163      ---Dates Last Seen---      Lat/Long: 33°08'37" / 115°44'19"      Township: 12S  
Occ Rank: Unknown      Element: 1952-09-14      UTM: Zone-11 N3667723 E617649      Range: 12E  
Origin: Natural/Native occurrence      Site: 1952-09-14      Precision: NON-SPECIFIC      Section: 08 Qtr NE  
Presence: Presumed Extant      Symbol Type: POINT      Meridian: S  
Trend: Unknown      Radius: 1 mile      Elevation: -235  
Main Source: BUREAU OF LAND MANAGEMENT 1980 (LIT)  
Quad Summary: OBSIDIAN BUTTE (3311526/029B)\*, KANE SPRING NE (3311527/030A)  
County Summary: IMPERIAL  
SNA Summary:  
Location: 10 MI NW WESTMORELAND. (SOUTHERN PORTION OF THE SALTON SEA.)  
-----Comments-----  
Distribution:  
Ecological:  
Threat:  
General: SBCM SPECIMEN #S-1876.  
Owner/Manager: UNKNOWN

Occurrence No. 34      Map Index:06063      ---Dates Last Seen---      Lat/Long: 33°10'48" / 115°55'16"      Township: 11S  
Occ Rank: Unknown      Element: 1933-11-27      UTM: Zone-11 N3671568 E600585      Range: 10E  
Origin: Natural/Native occurrence      Site: 1933-11-27      Precision: NON-SPECIFIC      Section: 27 Qtr SW  
Presence: Presumed Extant      Symbol Type: POINT      Meridian: S  
Trend: Unknown      Radius: 1 mile      Elevation:  
Main Source: BUREAU OF LAND MANAGEMENT 1980 (LIT)  
Quad Summary: KANE SPRING NW (3311528/030B)  
County Summary: IMPERIAL  
SNA Summary:  
Location: 7 MILES NE OF KANE SPRINGS.  
-----Comments-----  
Distribution:  
Ecological:  
Threat:  
General: LACM SPECIMEN #18195.  
Owner/Manager: UNKNOWN

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DENDROICHA PETECHIA BREWSTERI  
YELLOW WARBLER  
Element Code: ABPBX03018

—List Status—  
Federal: None  
State: None

—NDDB Element Ranks—  
Global: G5T2  
State: S2

—Other Lists—  
CDFG Status: SC

—Habitat Associations—

General: (NESTING) RIPARIAN PLANT ASSOCIATIONS. PREFERS WILLOWS, COTTONWOODS, ASPENS, SYCAMORES, & ALDERS FOR NESTING & FORAGING.  
Micro: ALSO NESTS IN MONTANE SHRUBBERY IN OPEN CONIFER FORESTS.

Occurrence No. 28	Map Index: 06282	—Dates Last Seen—	Lat/Long: 33°14'19" / 115°34'18"	Township: 11S
Occ Rank: Unknown		Element: 1952-10-04	UTM: Zone-11 N3678457 E633077	Range: 13E
Origin: Natural/Native occurrence		Site: 1952-10-04	Precision: NON-SPECIFIC	Section: 01 Qtr SW
Presence: Presumed Extant			Symbol Type: POINT	Meridian: S
Trend: Unknown			Radius: 1 mile	Elevation: -220
Main Source: BUREAU OF LAND MANAGEMENT 1980 (PERS)				
Quad Summary: NILAND (3311525/029A)*, WISTER (3311535/044D)				
County Summary: IMPERIAL				
SNA Summary:				
Location: 3 MI W OF NILAND.				
—Comments—				
Distribution:				
Ecological:				
Threat:				
General: SBCM #2-1896.				
Owner/Manager: UNKNOWN				

XYRAUCHEN TEXANUS  
RAZORBACK SUCKER  
Element Code: AFCJCL1010

List Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G1	CDFG Status:
State: Endangered	State: S1	

Habitat Associations

General: FOUND IN THE COLORADO RIVER BORDERING CALIFORNIA.

Micro: ADAPTED FOR SWIMMING IN SWIFT CURRENTS BUT ALSO NEED QUIET WATERS. SPAWN IN AREAS OF SAND/GRAVEL/ROCKS IN SHALLOW WATER

Occurrence No. 16	Map Index: 06317	—Dates Last Seen—	Lat/Long: 33°14'43" / 115°29'06"	Township: 11S
Occ Rank: Unknown		Element: 1974-XX-XX	UTM: Zone-11 N3679309 E641129	Range: 14E
Origin: Natural/Native occurrence		Site: 1974-XX-XX	Precision: NON-SPECIFIC	Section: 02 Qtr NW
Presence: Presumed Extant			Symbol Type: POINT	Meridian: S
Trend: Decreasing			Radius: 1 mile	Elevation: 60 ft
Main Source: ULMER, L. 1985 (LIT)				
Quad Summary: IRIS (3311524/028B)*, NILAND (3311525/029A), IRIS WASH (3311534/043C), WISTER (3311535/044D)				
County Summary: IMPERIAL				
SNA Summary: Camp Dunlop				
Location: EAST HIGHLINE CANAL AND PONDS, NILAND.				
—Comments—				
Distribution:				
Ecological:				
Threat:				
General: SIX CAPTURED 1973-1974. 1 CAPTURED, 7/19/74, FORK LENGTH 225MM.				
Owner/Manager: PVT				

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*PHRYNOSOMA MCALLI*

FLAT-TAILED HORNED LIZARD  
Element Code: ARACF12040

—List Status—  
Federal: None  
State: None

—NDDB Element Ranks—  
Global: G2  
State: S2

—Other Lists—  
CDFG Status: SC

—Habitat Associations—

General: RESTRICTED TO DESERT WASHES AND DESERT FLATS IN CENTRAL RIVERSIDE, EASTERN SAN DIEGO, AND IMPERIAL COUNTIES.  
Micro: CRITICAL HABITAT ELEMENT IS FINE SAND, INTO WHICH LIZARDS BURROW TO AVOID TEMP EXTREMES; REQUIRE VEG COVER AND ANTS.

Occurrence No. 19      Map Index:06085      —Dates Last Seen—      Lat/Long: 33°09'17" / 115°51'54"      Township: 12S  
Occ Rank: Unknown      Element: 1979-05-22      UTM: Zone-11 N3668842 E605821      Range: 11E  
Origin: Natural/Native occurrence      Site: 1979-05-22      Precision: NON-SPECIFIC      Section: 06 Qtr XX  
Presence: Presumed Extant      Symbol Type: POINT      Meridian: S  
Trend: Unknown      Radius: 2/5 mile      Elevation: -110  
Main Source: TURNER, F. ET AL 1980 (LIT)  
Quad Summary: KANE SPRING NE (3311527/030A)  
County Summary: IMPERIAL  
SNA Summary:  
Location: ABOUT 3 MILES WSW OF WHERE SAN FELIPE CREEK DRAINS INTO THE SALTON SEA.  
—Comments—  
Distribution: NEAR HWY 86.  
Ecological:  
Threat:  
General: ONE OBSERVATION.  
Owner/Manager: UNKNOWN

Occurrence No. 20      Map Index:06048      —Dates Last Seen—      Lat/Long: 33°07'31" / 115°58'27"      Township: 12S  
Occ Rank: Unknown      Element: 1979-05-06      UTM: Zone-11 N3665482 E595687      Range: 10E  
Origin: Natural/Native occurrence      Site: 1979-05-06      Precision: NON-SPECIFIC      Section: 18 Qtr XX  
Presence: Presumed Extant      Symbol Type: POLYGON      Meridian: S  
Trend: Unknown      Area: 282.5 ac      Elevation: 10 ft  
Main Source: TURNER, F. ET AL 1980 (LIT)  
Quad Summary: KANE SPRING NW (3311528/030B)\*, HARPERS WELL (3311518/030C)  
County Summary: IMPERIAL  
SNA Summary:  
Location: ~1 MILE EAST OF TARANTULA WASH AND ~7.5 MILES WEST OF HIGHWAY 86.  
—Comments—  
Distribution:  
Ecological:  
Threat:  
General: TWO OBSERVED (ONE DOR) 28 APR 1978. ONE OBSERVED 6 MAY 1979.  
Owner/Manager: UNKNOWN

Occurrence No. 21      Map Index:06080      —Dates Last Seen—      Lat/Long: 33°07'37" / 115°52'58"      Township: 12S  
Occ Rank: Unknown      Element: 1979-05-22      UTM: Zone-11 N3665752 E604196      Range: 10E  
Origin: Natural/Native occurrence      Site: 1979-05-22      Precision: NON-SPECIFIC      Section: 13 Qtr XX  
Presence: Presumed Extant      Symbol Type: POINT      Meridian: S  
Trend: Unknown      Radius: 2/5 mile      Elevation: -90  
Main Source: TURNER, F. ET AL 1980 (LIT)  
Quad Summary: KANE SPRING NW (3311528/030B)\*, HARPERS WELL (3311518/030C)  
County Summary: IMPERIAL  
SNA Summary:  
Location: 7 MILES EAST OF TARANTULA WASH AND ~1.5 MILES WEST OF HIGHWAY 86, ON HIGHWAY 78.  
—Comments—  
Distribution:  
Ecological:  
Threat:  
General: ONE LIZARD AND ONE SCAT OBSERVED.  
Owner/Manager: UNKNOWN

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PHRYNOSOMA MCALLI (cont.)  
FLAT-TAILED HORNED LIZARD  
Element Code: ARACF12040

—List Status—	—NDDB Element Ranks—	—Other Lists—
Federal: None	Global: G2	CDFG Status: SC
State: None	State: S2	

Occurrence No. 22	Map Index: 06046	—Dates Last Seen—	Lat/Long: 33°08'25" / 115°58'04"	Township: 12S
Occ Rank: Unknown		Element: 1979-05-05	UTM: Zone-11 N3667125 E596276	Range: 10E
Origin: Natural/Native occurrence		Site: 1979-05-05	Precision: NON-SPECIFIC	Section: 07 Qtr XX
Presence: Presumed Extant			Symbol Type: POINT	Meridian: S
Trend: Unknown			Radius: 2/5 mile	Elevation: 60 ft
Main Source: TURNER, F. ET AL 1980 (LIT)				
Quad Summary: KANE SPRING NW (3311528/030B)				
County Summary: IMPERIAL				
SNA Summary:				
Location: 1 MI EAST OF TARANTULA WASH.				
—Comments—				
Distribution:				
Ecological:				
Threat:				
General: ONE OBSERVED.				
Owner/Manager: UNKNOWN				

Occurrence No. 65	Map Index: 39610	—Dates Last Seen—	Lat/Long: 33°07'32" / 115°56'33"	Township: 12S
Occ Rank: Unknown		Element: 1978-04-21	UTM: Zone-11 N3665529 E598646	Range: 10E
Origin: Natural/Native occurrence		Site: 1978-04-21	Precision: SPECIFIC	Section: 17 Qtr XX
Presence: Presumed Extant			Symbol Type: POINT	Meridian: S
Trend: Unknown			Radius: 80 meters	Elevation: -35
Main Source: BERRY, K. 1978 (OBS)				
Quad Summary: KANE SPRING NW (3311528/030B)*, HARPERS WELL (3311518/030C)				
County Summary: IMPERIAL				
SNA Summary:				
Location: HIGHWAY 78, 5.1 MILES WEST OF THE JUNCTION WITH HIGHWAY 86.				
—Comments—				
Distribution:				
Ecological:				
Threat:				
General: 1 ADULT FEMALE FOUND ALIVE ON ROAD.				
Owner/Manager: CALTRANS				

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ACTIVE DESERT DUNES

Element Code: CTT22100CA

-----List Status-----

Federal: None

State: None

-----NDDB Element Ranks-----

Global: G4

State: S2.2

-----Other Lists-----

-----Habitat Associations-----

General: None for this Element

Micro: None for this Element

Occurrence No. 2      Map Index:20105      ---Dates Last Seen---      Lat/Long: 33°11'37" / 115°53'04"      Township: 11S  
Occ Rank: Unknown      Element: 193X-XX-XX      UTM: Zone-11 N3673128 E603998      Range: 11E  
Origin: Natural/Native occurrence      Site: 193X-XX-XX      Precision: NON-SPECIFIC      Section: 30 Qtr XX  
Presence: Presumed Extant      Symbol Type: POLYGON      Meridian: S  
Trend: Unknown      Area: 2,239.3 ac      Elevation: 150 ft  
Main Source: REMPEL, P. 1936 (LIT)  
Quad Summary: KANE SPRING NE (3311527/030A)\*, KANE SPRING NW (3311528/030B)  
County Summary: IMPERIAL  
SNA Summary:  
Location: "BARCHAN DUNE AREA", SW SHORE OF THE SALTON SEA, TO THE N AND ADJACENT TO RD LEADING TO NAVAL TEST BASE HEADQUARTERS.

-----Comments-----  
Distribution: BOUNDARY PER USGS TOPO; UNSURE WHERE ACTIVE VERSUS STABLE OR PARTIALLY STABLE DUNES OCCUR. DUNE AREA POSSIBLY MORE EXTENSIVE. REMPEL INDICATED 120-130 BARCHANS IN 4.3 BY 1.5 MILE AREA OVER GENTLE W-FACING SLOPE. NEED MORE DIST INFO.  
Ecological: REMPEL LISTS SEVERAL WOODY PERENNIALS AND PERENNIAL AND ANNUAL HERBS. UNCLEAR WHICH OCCUR SPP ON ACTIVE DUNES VS STABLE. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACK OF SPP. INFO.  
Threat: UNSURE SINCE SOURCE IS FROM 1936. POSSIBLY PARTIALLY EXTIRPATED. NEED CURRENT CONDITION INFORMATION.  
General: CRESCENTIC DUNES W/HOLLOW FACING LEEWARD TO WINDS. FEW OTHERS ARE LOW MOUNDS SMLLR THAN BARCHANS & IN MOST CASES PRECURSORS TO CRESENTIC DUNES, OR LRG DUNES W/COMPLEX CONTOURS DUE TO COALESCENCE OF TWO OR MORE DUNES, OR MODIFICATION OF LRG.  
Owner/Manager: BLM, DOD, BOR

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STABILIZED AND PARTIALLY STABILIZED DESERT DUNES

Element Code: CTT22200CA

—List Status—  
Federal: None  
State: None

—NDDB Element Ranks—  
Global: G4  
State: S3.2

—Other Lists—

—Habitat Associations—  
General: None for this Element  
Micro: None for this Element

Occurrence No. 3      Map Index: 20105      —Dates Last Seen—      Lat/Long: 33°11'37" / 115°53'04"      Township: 11S  
Occ Rank: Unknown      Element: 193X-XX-XX      UTM: Zone-11 N3673128 E603998      Range: 11E  
Origin: Natural/Native occurrence      Site: 193X-XX-XX      Precision: NON-SPECIFIC      Section: 30 Qtr XX  
Presence: Presumed Extant      Symbol Type: POLYGON      Meridian: S  
Trend: Unknown      Area: 2,239.3 ac      Elevation: 150 ft  
Main Source: REMPEL, P. 1936 (LIT)  
Quad Summary: KANE SPRING NE (3311527/030A)\*, KANE SPRING NW (3311528/030B)  
County Summary: IMPERIAL  
SNA Summary:  
Location: "BARCHAN DUNE AREA", SW SHORE OF THE SALTON SEA, TO THE N AND ADJACENT TO RD LEADING TO NAVAL TEST BASE HEADQUARTERS.

—Comments—  
Distribution: BOUNDARY PER USGS TOPO; UNSURE WHERE STABLE DUNES VS ACTIVE DUNES OCCUR. NEED MORE DISTRIBUTION INFO. DUNE AREA POSSIBLY MORE EXTENSIVE. REMPEL INDICATED 120-130 BARCHANS IN 4.3 BY 1.5 MILE AREA OVER GENTLE W-FACING SLOPE.  
Ecological: LARREA TRIDENTATA, AMBROSIA DUMOSA, ATRIPLEX CANESCENS, ERIOGONUM DESERTICOLA, DALEA EMORYI, ASTRAGALUS PREUSSII, TIQUILIA PALMERI, HESPEROCAULIS UNDULATA AND OROBANCHE COOPERI PRESENT. NEED MORE INFO ABOUT VEG ON STABLE VS ACTIVE DUNES.  
Threat: UNKNOWN SINCE SOURCE IS FROM 1936. SITE COULD BE PARTIALLY EXTIRPATED. THIS WAS OCC #003 OF CTT22200CA.  
General: CRESENTIC DUNES W/HOLLOW FACING LEEWARD TO WIND. OTHERS ARE LOW MOUNDS SMALLER THAN BARCHANS & MAY BE PRECURSORS TO CRESENTIC DUNES OR ARE LRG DUNES W/COMPLEX CONTOURS DUE TO COALESCENCE OF TWO OR MORE BARCHANS OR MODIFICATION OF SINGLE DUNE.  
Owner/Manager: DOD, BLM, BOR

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ASTRAGALUS INSULARIS VAR HARWOODII  
HARWOOD'S MILK-VETCH  
Element Code: PDFAB0F491

List Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G5T3	CNPS List: 2
State: None	State: S2.2?	R-E-D Code: 2-2-1

Habitat Associations

General: DESERT DUNES. IN CALIFORNIA, IN IMPERIAL, SAN DIEGO, AND RIVERSIDE COUNTIES.  
Micro: OPEN SANDY FLATS AND SANDY OR STONY DESERT WASHES; MOSTLY IN CREOSOTE BUSH SCRUB. -50-500M.

Occurrence No. 7	Map Index: 28137	—Dates Last Seen—	Lat/Long: 33°11'11" / 115°51'10"	Township: 11S
Occ Rank: Unknown		Element: XXXX-XX-XX	UTM: Zone-11 N3672350 E606944	Range: 11E
Origin: Natural/Native occurrence		Site: XXXX-XX-XX	Precision: NON-SPECIFIC	Section: 29 Qtr NW
Presence: Presumed Extant			Symbol Type: POINT	Meridian: S
Trend: Unknown			Radius: 1/5 mile	Elevation: -156
Main Source: OLECH, L. 1986 (PERS)				
Quad Summary: KANE SPRING NE (3311527/030A)				
County Summary: IMPERIAL				
SNA Summary:				
Location: 1 MILE WEST OF THE SALTON SEA AND 4 MILES NORTH OF THE JUNCTION OF HIGHWAY 86 AND HIGHWAY 78.				
Comments:				
Distribution: MAPPED AT THE EAST END OF SMALL DUNE SYSTEM AND SOUTHEAST OF LANDING STRIP.				
Ecological:				
Threat:				
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS MAP DETAIL PROVIDED BY OLECH (1986).				
Owner/Manager: UNKNOWN				

Full Condensed Report - Multiple Records per Page  
Calenergy

ASTRAGALUS MAGDALENAE VAR PEIRSONII  
PEIRSON'S MILK-VETCH  
Element Code: PDFAB0F532

List Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3G4T2	CNPS List: 1B
State: Endangered	State: S2.2	R-E-D Code: 2-2-2

Habitat Associations

General: DESERT DUNES. HISTORICALLY IN CALIFORNIA, KNOWN FROM IMPERIAL AND SAN DIEGO COUNTY; EXTIRPATED IN SAN DIEGO CO.?  
Micro: SLOPES AND HOLLOWES IN MOBILE DUNES, USUALLY TO THE LEE OF THE PREVAILING WINDS. -55-250M.

Occurrence No. 41	Map Index:06089	—Dates Last Seen—	Lat/Long: 33°07'05" / 115°51'37"	Township: 12S
Occ Rank: Unknown		Element: XXXX-XX-XX	UTM: Zone-11 N3664758 E606339	Range: 11E
Origin: Natural/Native occurrence		Site: XXXX-XX-XX	Precision: NON-SPECIFIC	Section: 19 Qtr NE
Presence: Presumed Extant			Symbol Type: POINT	Meridian: S
Trend: Unknown			Radius: 1/5 mile	Elevation: -180
Main Source: OLECH, L. 1986 (PERS)				
Quad Summary: KANE SPRING (3311517/030D)				
County Summary: IMPERIAL				
SNA Summary:				
Location: APPROX 1.25 AIRMI WNW OF KANE SPRING, S OF SAN FELIPE CR.				
Comments:				
Distribution:				
Ecological:				
Threat:				
General: UNKNOWN WHEN SEEN.				
Owner/Manager: BLM-ACEC				

Occurrence No. 42	Map Index:06093	—Dates Last Seen—	Lat/Long: 33°07'43" / 115°51'03"	Township: 12S
Occ Rank: Unknown		Element: XXXX-XX-XX	UTM: Zone-11 N3665940 E607200	Range: 11E
Origin: Natural/Native occurrence		Site: XXXX-XX-XX	Precision: NON-SPECIFIC	Section: 17 Qtr NW
Presence: Presumed Extant			Symbol Type: POINT	Meridian: S
Trend: Unknown			Radius: 1/5 mile	Elevation: -170
Main Source: OLECH, L. 1986 (PERS)				
Quad Summary: KANE SPRING NE (3311527/030A)				
County Summary: IMPERIAL				
SNA Summary:				
Location: APPROX 0.25 MI NE OF JCT HWY 78 & HWY 99, W OF SALTON SEA.				
Comments:				
Distribution:				
Ecological:				
Threat:				
General: UNKNOWN WHEN VAR SEEN.				
Owner/Manager: BLM-EL CENTRO RA				

## **BIOLOGICAL RESOURCES (Need to incorporate KMM's Comments)**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (13) (D):** A discussion of all permanent and temporary impacts to biological resources from site preparation, construction activities, and plant operation.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment BIO-3:** Provide a discussion of the on-site use and discharge of water as it relates to the retention ponds. Because brine and reject water from the reverse osmosis potable water system will also be discharged to uncovered ponds, provide a discussion on the potential for impacts. For any use of water during pipeline installation, please describe the use of discharge water.

**Response:** Three different flows entering the brine pond are identified in chapter 3.3.2.4.4:

- 1) Brine overflow from the clarifiers and thickener during upset conditions;
- 2) Condensate from steam vent tanks during upset conditions; and
- 3) Reject water from reverse osmosis

Of these three potential sources, only reject water from the reverse osmosis would apply during normal operating conditions. Reject water from reverse osmosis is about 720 gpd, which would evaporate quickly and no significant accumulation of water is expected. Constituent make-up of the RO reject water is provided in Table 5.4.4. This water does not pose a significant ecological risk to wildlife. Due to the limited availability of water from the reverse osmosis process and the low level of potentially harmful constituents in the RO reject water, potential adverse effects to wildlife are considered less than significant due to the availability of freshwater in the immediate vicinity (i.e., the IID canals and wetlands on the refuge).

Brine overflows and condensate would apply only during upset conditions, creating temporary water accumulation in the pond since excess liquid will be pumped to a plant well in a timely manner. The expected brine composition is provided in the AFC under table 3.3-1. This water does not pose a significant ecological risk to wildlife because the availability of other water sources and desert adaptations to conserve water, desert species will not preferentially utilize the briny water sources of the ponds and their potential exposure to the constituents of the ponds will not pose a significant ecological risk. The salinity of the brine will likely cause taste aversion and involuntary rejection of the brine, thus limiting the intake of

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the water for those individuals that may attempt to drink from the pond. Most bat species do not require a free source of water to remain in daily water balance. Their water requirements are met with water associated with their food (insects) and that derived from metabolism (metabolic water). As with birds, small mammals would not be a significant risk from drinking water from the ponds.

## BIOLOGICAL RESOURCES

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (h) (4):** A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment BIO-4:** Provide the status of all permits and approvals identified within section 5.5.6.4 of for all outstanding permits or approvals provide the expected timeframe.

**Response:** See response to BIO-1 regarding CWA Section 404 permit.

A 401 application was filed with RWQCB on August 14, 2002. Section 401 water quality certification has been requested concurrent with the 404 permit application. (Filed with the Corps on July 11, 2002). The 404 permit requires 401 certification prior to issuance of the 404 permit.

A 1603 streambed alteration agreement application will be submitted to the California Department of Fish and Game by October 15, 2002. The application review process requires approximately 30 days to complete, and a certified CEQA document (or its equivalent) is required for issuance of the streambed alteration agreement. CDFG staff were present at August 21, 2002 site visit meeting and are aware that a 1603 agreement application will be submitted shortly.

LORS	Permit (Application)	Issuing Agency	Processing Time
CWA Sec 404	404 wetlands Permit	ACOE, USFWS, CDFG	6 months
CWA Sec. 401	Water Quality Certification	RWQCB, USFWS, CDFG	60 days
FG Code 1603	Streambed Alteration Agreement	CDFG	60 days pending CEQA Certification

## CULTURAL RESOURCES

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (1) (D) (All):** A schedule including when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment CUL-1:** Please indicate if a permit from a state or federal agency is needed to construct transmission lines over a state highway. If a permit is needed, please specify which agency.

**Response:** An encroachment permit would be required for the crossing of State Highway 86 for the proposed transmission lines. The permit for an "Encroachment Permit project" would be issued by the California Department of Transportation (CalTrans), which would serve as a responsible agency under CEQA (i.e., the permit will be issued subsequent to and as a condition of the CEC's site certification). The environmental review of the encroachment will occur as part of the AFC review; no additional environmental review would be required.

The Encroachment Permit does not require federal review or approval. See, Manual for Encroachment Permits on California State Highways, CalTrans, 2002, Section 205.3, [http://www.dot.ca.gov/hq/traffops/developserv/permits/encroachment\\_permits\\_manual/index.html](http://www.dot.ca.gov/hq/traffops/developserv/permits/encroachment_permits_manual/index.html)

The Applicant has initiated consultation with CalTrans regarding the Encroachment Permit. The contact person at Caltrans is: Jim Buksa, CalTrans, 2829 Juan Street, P.O. Box 85406, San Diego, CA 92186-5406; the phone number is (619) 688-6968.

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Permit/Approval	Responsible Agency)	Contact Information	Expected Approval Date	Status/Steps Taken to Obtain Permit/Approval
Encroachment Permit	California Department of Transportation	Jim Buksa (M.S. 50) CalTrans District 11 2829 Juan Street, P.O. Box 85406 San Diego, CA 92186-5406 (619) 688-6968	Encroachment Permit will be issued after completion of CEC CEQA review.	Applicant has initiated consultation with Caltrans and will submit preliminary plans for Caltrans' review. Application for Encroachment Permit will be submitted after completion of CEC's CEQA review. CalTrans will be invited to participate as commenting agency in AFC review.

## **CULTURAL RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (g) (2) (B):** A description of all literature searches and field surveys used to provide information about known cultural resources in the project vicinity. A discussion of the dates of the surveys, methods used in completing the surveys, and the identification and qualification of the individuals conducting the surveys shall be included.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment CUL-2:** Please provide a cultural resources survey for the project in ARMR format, including a map that depicts the relationship between the project components and the identified cultural (archeological and built) resources (submit under confidential cover).

**Response:** A cultural resources survey entitled Archaeological Inventory of the Salton Sea Unit 6 Geothermal Resource Production Facility Imperial County, California for the SSU6 Project in ARMR format was submitted under separate cover as a limited circulation confidential report on September 13, 2002.

## **CULTURAL RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (h) (1) (B):** Tables which identify each agency with jurisdiction to issue applicable permits and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment CUL-3:** If a permit is needed from a state or federal agency to cross a state highway with transmission lines, please provide the name, title, phone number, and address of the agency's contact.

**Response:** See Response to Comment Cultural-1.

## **CULTURAL RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (h) (3):** The name, title, phone number, and address, if known, of an official within each agency who will serve as a contact person for the agency.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment CUL-4:** If a permit is needed from a state or federal agency to cross a state highway with transmission lines, please provide the name, title, phone number, and address of the agency's contact.

**Response:** See Response to Comment Cultural-1.

## LAND USE

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (1) (D) (All):** A schedule including when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment LU-1:** Recent land use (i.e., within the last five years) on the project site was irrigated crop production on prime soils. Provide discussion and mitigation measures for loss of prime agricultural land.

Warren Alquist Section 25120 defines "thermal" in a manner that excludes wells, pads, and pipelines for geothermal resources from our permits. P.R.C. §25120 states: "Exploratory, development and production wells, resource transmission lines, and other related facilities used in connection with geothermal...field development project are not appurtenant facilities for the purposes of this division." Please summarize agency, and county, permits required for the wells, pads, and pipelines associated with the project, the status of each, with bench marks, showing that requirements will be met within the review process time frame.

**Response:** (a) Impacts to Agricultural Land. As described in the AFC (Section 5.3.2.2, pages 5.3-12 through 5.3-14) the project would develop geothermal facilities on approximately 97 acres of Prime Farmland and 75 acres of Farmland of Statewide Importance. However, as discussed in more detail below, based upon the evaluation of the agricultural land and the related impacts and because the adopted local plans identify the site for geothermal uses as an alternative to agriculture, no potentially significant impacts were identified.

The analysis of potential impacts utilized the Land Evaluation and Site Assessment (LESA) model, which has been developed by the California Department of Conservation and which is identified in the State CEQA Guidelines (Appendix G, State CEQA Guidelines) as the "optimal model" for such analysis. See Appendix S of the AFC. This analysis demonstrates that the development of these lands would not be considered a significant impact.

There are approximately 484,000 acres of farmable area within the surrounding area (i.e., within Imperial Irrigation District's service area). The project would represent a loss of approximately 0.0004 percent of the total net

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acreage in agricultural production, which is not considered a substantial loss of farmland.

The County of Imperial's General Plan and zoning designate the site for geothermal exploration and development as an alternative to agricultural uses. The SSU6 facility, well pads and associated pipelines, and portions of the transmission corridors are within a geothermal overlay zone.

The local land use decision to adopt the geothermal overlay zone was subject to environmental review pursuant to CEQA. The County analyzed the potential impacts of the geothermal exploration and development in this area, including the potential impacts related to agricultural resources, in the Salton Sea Anomaly Master Environmental Impact Report (MEIR), dated 1981. The MEIR notes that while the loss of arable land cannot be completely avoided, with appropriate mitigation, impacts would not significantly reduce the amount of agricultural acreage in production or interfere with agricultural activities (MEIR, Section 3.8.2.1).

The mitigation measures identified in the MEIR have been incorporated into the proposed project design, as follows:

- The plant site is located at the edge of an agricultural area and is adjacent to existing roads, thereby minimizing the loss and disturbance of agricultural land;
- The location of the production and injection wells minimize the agricultural impacts;
- Pipelines to the wells have been routed to follow existing roads to the extent feasible; and
- The construction of the project will not significantly impact any nearby agricultural properties.

In addition, if required, the Applicant will reserve, or cause to be reserved, other agricultural land, or will provide, or cause to be provided, improvements to other agricultural lands, to further reduce the potential impacts related to the development of prime agricultural land.

(b)

Permits for Wells, Pads, and Pipelines. The CEC has the exclusive authority to certify all sites for thermal powerplants and electric transmission lines and related facilities in the state, and the issuance of a certificate by the commission "shall be in lieu of any permit, certificate, or other similar

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document required by any state, local or regional agency, or federal agency to the extent permitted by federal law, for the use of the site and related facilities.” Cal. Public Resources Code § 25500. The term, “thermal powerplant,” is defined in the Warren Alquist Act to mean electrical generating facilities of 50 megawatts or more and any facilities appurtenant thereto. Cal. Public Resources Code § 25120. However, exploratory, development and production wells, resource transmission lines, and other related facilities (e.g., injection wells and pipelines) are specifically excluded from the definition of “appurtenant facilities.” Therefore, although the CEC will be the lead agency for purposes of CEQA (Cal. Public Resources Code § 21067), the wells, well pads, and transmission lines will be subject to the review and approval of two responsible agencies: (1) the California Department of Conservation, Division of Oil and Gas and (2) the County of Imperial.

California Department of Conservation, Division of Oil, Gas and Geothermal Resources. The Division of Oil, Gas, and Geothermal Resources (DOGGR) supervises the drilling, operation, maintenance, and plugging and abandonment of onshore and offshore oil, gas, and geothermal wells, preventing damage to: (1) life, health, property, and natural resources; (2) underground and surface waters suitable for irrigation or domestic use; and (3) oil, gas, and geothermal reservoirs. Division requirements encourage wise development of California’s oil, gas, and geothermal resources while protecting the environment. DOGGR’s written approval is required prior to commencing drilling production and injection wells for geothermal facilities.

DOGGR will act as a responsible agency under the California Environmental Quality Act (“CEQA”) (Cal. Public Resources Code §§ 21000 et seq., Cal. Code of Regulations, Title 14, §§ 15000 et seq.). Therefore, DOGGR will consider the environmental review prepared by the CEC prior to issuing drilling permits for the Salton Sea Unit 6 wells, consistent with the State CEQA Guidelines (Cal. Code of Regs., title 14, § 15096).

The Applicant is in consultation with DOGGR regarding the issuance of drilling permits. Applications for the necessary permits will be submitted after completion of the CEC’s CEQA review. It is anticipated that the CEC will impose a condition on the proposed project to obtain the necessary drilling permits prior to commencing drilling for the wells.

County of Imperial – Conditional Use Permit. The County of Imperial requires Conditional Use Permit (“CUP”, also referred to as Geothermal Permits) for major geothermal projects and facilities. See County Code, Title 9, Division

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17, Section 91701.05. The standards for geothermal facilities are described in the County Code, Title 9, Division 17, Sections 91702.00 – 91702.02. The CUP application will be reviewed by County staff and requires the approval of the County Planning Commission.

The County will act as a responsible agency pursuant to CEQA. Therefore, the County will consider the environmental review prepared by the CEC prior to issuing a CUP for the Salton Sea Unit 6 wells and transmission pipelines, consistent with the State CEQA Guidelines (Cal. Code of Regs., title 14, § 15096). It is anticipated that the CEC will impose a condition on the proposed project to obtain the County's approval of a CUP prior to commencing drilling for the wells.

The Applicant plans to submit an application for the CUP prior to September 30, 2002, to facilitate the County's preliminary review and staff's evaluation. The County has indicated that it will strive to put the proposed action on the Planning Commission's agenda as soon as possible following the CEC's environmental review. More specific scheduling benchmarks will be available following issuance of the CEC's Final Staff Assessment.

County of Imperial – Development Permit. The County requires a Development Permit before construction or development begins within any area located around the Salton Sea and lying at or below the -220 foot elevation contour. The proposed wells will be constructed below the -220 foot elevation contour. Therefore, a Development Permit is required. See, County Land Use Ordinance, Title 9, Division 16, Chapter 4. The Building Official administers and implements this ordinance by granting or denying development permits in accordance with its provisions.

As noted above, the County will act as a responsible agency, pursuant to CEQA, and will consider the information contained in the CEC's CEQA document. It is anticipated that the CEC will impose a condition on the proposed project to obtain the County's approval of the necessary Development Permits prior to commencing development of facilities at or below the -220 foot elevation contour.

## **LAND USE**

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (g) (1):** Please summarize agency, and county, permits required for the wells, pads, and pipelines associated with the project, the status of each, with bench marks, showing that requirements will be met within the review process time frame.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment LU-2:** Provide mitigation plan for loss of prime agricultural land. See item B (g) (3) (B) for further discussion.

**Response:** See Response to Comment LU-1(a).

## LAND USE

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (3) (B):** A discussion of the compatibility of the proposed facilities with present and expected land uses, and conformity with any long-range land use plans adopted by any federal, state, regional, or local planning agency. The discussion shall identify the need, if any, for variances or any measures that would be necessary to make the proposal conform with permitted land uses

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment LU-3:** The AFC (Sec. 5.8.1.1.2 & 5.3.1.4) indicates that the project site is zoned Heavy Agriculture, with a Geothermal Overlay and is irrigated prime farmland. Under CEQA, the applicant is required to mitigate for the permanent loss of prime agriculture land. Please provide a discussion and mitigation plan for the removal of 80 acres from active agriculture use to a non-agricultural use.

**Response:** See response to comment LU-1(a) above.

## LAND USE

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (h) (4):** A schedule including when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment LU-4:** Warren Alquist Section 25120 defines "thermal" in a manner that excludes wells, pads, and pipelines for geothermal resources from our permits. P.R.C. §25120 states: "Exploratory, development and production wells, resource transmission lines, and other related facilities used in connection with geothermal...field development project are not appurtenant facilities for the purposes of this division." Please summarize agency, and county, permits required for the wells, pads, and pipelines associated with the project, the status of each, with bench marks, showing that requirements will be met within the review process time frame.

**Response:** See attached Land Use Permitting Table.

SALTON SEA UNIT 6 POWER PROJECT (02-AFC-02)  
RESPONSE TO CEC DATA ADEQUACY COMMENTS

Dated September 18, 2002

Permit/Approval	Responsible Agency	Expected Application Date	Expected Approval Date	Status/Steps Taken to Obtain Permit/Approval
<b>LAND USE (AFC Section 5.8)</b>				
Approval of Notice of Intention to Drill, pursuant to Cal. Code of Regs., title 14, § 1931.	Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR retains jurisdiction to approve drilling)	12/02	Post Certification.	Applicant will submit Notice of Intention to Drill to DOGGR after completion of CEC's Final Staff Assessment.
Conditional Use Permit (aka Geothermal Permit) for well sites and pipelines, pursuant to the County of Imperial's Land Use Ordinance, Title 9, Division 17, Sections 91702.05 and 91702.00-.02.	County of Imperial (Planning Commission approval) (County of Imperial retains jurisdiction for permits for wells, well pads, and transmission pipelines)	9/02	12/02	Applicant will submit application in September 2002. County will conduct preliminary review based upon Applicant's AFC and CUP Application. The CEC's Final Staff Assessment will serve as the CEQA document for the County's decision. Geothermal Permit requires approval of Planning Commission. County will schedule public hearing before Planning Commission after issuance of County's Final Staff Assessment.
Development Permits for development of well pads and pipelines at or below an elevation of -220 MSL, pursuant to the County's Flood Damage Prevention Regulation, Title 9, Division 16, §§ 91604.00 et seq.	County of Imperial (Building Department Approval)	12/03	Post Certification	Applicant will submit development permit applications for each well or pipeline within any area of special flood hazards, including lands located around the Salton Sea lying at or below the -220 foot elevation contour. Applications will be submitted concurrent with or prior to submittal of applications to the Department of Oil and Gas, Geothermal Resources Division for drilling permits.

## PROJECT OVERVIEW

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (1) (D):** A list of the requirements for permitting by each federal, state, regional, and local agency that has jurisdiction over the proposed project or that would have jurisdiction, but for the exclusive jurisdiction of the commission, and the information necessary to meet those requirements.

## INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment PO-1:** Please summarize agency, and county, permits required for the wells, pads, and pipelines associated with the project, the status of each, with bench marks, showing that requirements will be met within the review process time frame.

**Response:** Permits For Wells, Pads, And Pipelines. The CEC has the exclusive authority to certify all sites for thermal powerplants and electric transmission lines and related facilities in the state, and the issuance of a certificate by the commission "shall be in lieu of any permit, certificate, or other similar document required by any state, local or regional agency, or federal agency to the extent permitted by federal law, for the use of the site and related facilities." Cal. Public Resources Code § 25500. The term, "thermal powerplant," is defined in the Warren Alquist Act to mean electrical generating facilities of 50 megawatts or more and any facilities appurtenant thereto. Cal. Public Resources Code § 25120. However, exploratory, development and production wells, resource transmission lines, and other related facilities (e.g., injection wells and pipelines) are specifically excluded from the definition of "appurtenant facilities." Therefore, although the CEC will be the lead agency for purposes of CEQA (Cal. Public Resources Code § 21067), the wells, well pads, and transmission lines will be subject to the review and approval of two responsible agencies: (1) the California Department of Conservation, Division of Oil and Gas and (2) the County of Imperial.

1. California Department of Conservation, Division of Oil, Gas and Geothermal Resources. The Division of Oil, Gas, and Geothermal Resources (DOGGR) supervises the drilling, operation, maintenance, and plugging and abandonment of onshore and offshore oil, gas, and geothermal wells, preventing damage to: (1) life, health, property, and natural resources; (2) underground and surface waters suitable for irrigation or domestic use; and (3) oil, gas, and geothermal reservoirs. Division requirements encourage wise development of California's oil, gas, and geothermal resources while protecting the environment.

DOGGR's written approval is required prior to commencing drilling production and injection wells for geothermal facilities.

DOGGR will act as a responsible agency under the California Environmental Quality Act ("CEQA") (Cal. Public Resources Code §§ 21000 et seq., Cal. Code of Regulations, Title 14, §§ 15000 et seq.). Therefore, DOGGR will consider the environmental review prepared by the CEC prior to issuing drilling permits for the Salton Sea Unit 6 wells, consistent with the State CEQA Guidelines (Cal. Code of Regs., title 14, § 15096).

The Applicant is in consultation with DOGGR regarding the issuance of drilling permits. Applications for the necessary permits will be submitted after completion of the CEC's CEQA review. It is anticipated that the CEC will impose a condition on the proposed project to obtain the necessary drilling permits prior to commencing drilling for the wells.

2. County of Imperial – Conditional Use Permit. The County of Imperial requires Conditional Use Permit ("CUP", also referred to as Geothermal Permits) for major geothermal projects and facilities. See County Code, Title 9, Division 17, Section 91701.05. The standards for geothermal facilities are described in the County Code, Title 9, Division 17, Sections 91702.00 – 91702.02. The CUP application will be reviewed by County staff and requires the approval of the County Planning Commission.

The County will act as a responsible agency pursuant to CEQA. Therefore, the County will consider the environmental review prepared by the CEC prior to issuing a CUP for the Salton Sea Unit 6 wells and transmission pipelines, consistent with the State CEQA Guidelines (Cal. Code of Regs., title 14, § 15096). It is anticipated that the CEC will impose a condition on the proposed project to obtain the County's approval of a CUP prior to commencing development of the wells or pipelines.

The Applicant plans to submit an application for the CUP prior to September 30, 2002, to facilitate the County's preliminary review and staff's evaluation. The County has indicated that it will strive to put the proposed action on the Planning Commission's agenda as soon as possible following the CEC's environmental review. More specific scheduling benchmarks will be available following issuance of the CEC's Final Staff Assessment.

County of Imperial – Development Permit. The County requires a Development Permit before construction or development begins within any area located around the Salton Sea and lying at or below the minus-

220 foot elevation contour. The proposed wells will be constructed below the -220 foot elevation corridor. Therefore, a Development Permit is required. See, County Land Use Ordinance, Title 9, Division 16, Chapter 4. The Building Official administers and implements this ordinance by granting or denying development permits in accordance with its provisions.

As noted above, the County will act as a responsible agency, pursuant to CEQA, and will consider the information contained in the CEC's CEQA document. It is anticipated that the CEC will impose a condition on the proposed project to obtain the County's approval of the necessary Development Permits prior to commencing development at or below the – 220-foot elevation contour.

## PROJECT OVERVIEW

**CEC SITING REGULATIONS & INFORMATION, Appendix B (a) (3) (C):** A description of the legal relationship between the applicant and each of the persons or entities specified in subsections (a)(3)(A) and (B).

## INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment PO-2:** Please explain the business/lease arrangement between Sinclair, Magma, and CEC.

**Response:** Imperial Magma LLC owns the property upon which the SSU6 plant will be built. Imperial Magma LLC is an affiliate of the Applicant. Prior to commencing construction, Imperial Magma LLC will enter into a ground lease with the Applicant whereby the Applicant will have exclusive use of the land surface (to a depth of 500 feet below the surface).

Magma Land Company I is the successor lessee under a geothermal mineral lease with the Estate of Alice (Sinclair) Denman, the beneficiaries of which own an undivided interest in the mineral rights to the property. Accordingly, under the terms of the geothermal lease between the Estate and Magma Land Company I, Magma Land Company I controls all exploration and development rights associated with the production and utilization of geothermal resources on the leased premises.

## **RELIABILITY**

**CEC SITING REGULATIONS & INFORMATION, Appendix B (i) (3) (B) (v):** The expected power plant maturation period.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment REL-1:** Please describe the maturation period. For mature technologies, this may amount to the start up period.

**Response:** The site arrangement is depicted in Figures 3.3-1a and 3.3-1b and the major equipment list is presented in Appendix F. Given the maturity of the proposed technologies, the maturation period corresponds to the anticipated 3-month start up period of major components such as steam turbine generator set, injection pumps, vacuum belt filter, cooling water system, electrical equipment and abatement systems.

## **SOCIOECONOMICS**

**CEC SITING REGULATIONS & INFORMATION, Appendix B (g) (1):** .....provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation existing site.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment SOC-1:** Please estimate the secondary (indirect and induced) income and employment economic impacts for construction and operation of the power plant. Show the income and employment multipliers e.g., Type 1, Type II, or Type III as appropriate and how they are calculated. Delineate and explain the rationale for the region used in the economic impact estimates. To the extent possible for these and all economic estimates, indicate the year all economic estimates were made.

Please estimate the cumulative impacts by discussing the projects, workforce numbers and dates of construction and operation. Also, indicate if any major projects are planned near the power plant, associated pipelines (e.g. water) or electrical transmission lines.

**Response:** Secondary economic impacts attributable to the Salton Sea Unit 6 project were estimated using IMPLAN, which is an economic impact modeling tool that uses region-specific input/output accounts by industry to estimate secondary impacts of economic stimuli. Secondary impacts include (1) indirect impacts that occur due to the purchase of goods and services by firms involved with project construction or operation, and (2) induced impacts, which result from household spending (i.e., the spending in the local area of direct labor income earned by project construction workers and operation employees). Secondary impacts can occur in the form of employment, income, output and taxes.

The study area for the IMPLAN model includes Imperial County because (1) the project is located in Imperial County, (2) the applicant anticipates that the majority of the labor resources required for the project would be procured from areas within Imperial County, and (3) the county is the smallest geographic unit for which IMPLAN data files are constructed. The applicant expects that one-third of the non-labor resources required for construction (including fuel, materials, equipment, etc.) would be purchased within Imperial County.

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Specialized equipment would likely be purchased in non-local areas. Imperial County was treated as the study area to estimate secondary effects that residents closest to the project's location would experience.

All project construction and operation cost data discussed in the AFC are presented in 2002 dollars. The IMPLAN model was run using these project cost data in 2002 dollars and 1998 IMPLAN data files for Imperial County. The input/output relationships among industries and the social accounting matrices inherent in SSU6 model represent Imperial County's economy in 1998. SSU6 costs (in 2002 dollars) were deflated to 1998 dollars in order to run the impact analysis using the 1998 data files; the results were inflated and therefore represent 2002 dollars.

SAM multipliers were used for the impact analysis. SAM multipliers are similar to Type II multipliers because they include both the indirect effect and the induced effect. However, the use of SAM multipliers is recommended by the writers of the IMPLAN software because an induced effect estimate using a SAM multiplier is based on information in the social accounting matrix, which accounts for social security and income tax leakage, institution savings, and commuting.

The multipliers for the SSU6 project impact analysis were derived by editing the specific industry data for Imperial County in the IMPLAN input/output relationships to represent the direct economic impacts associated with SSU6, e.g., construction cost and annual operation cost. The results were modified multipliers and related secondary impacts that reflect the income, employment, and spending relationships inherent in the SSU6 project. IMPLAN sector no. 51, New Highways and Streets, is the IMPLAN sector most similar to power plant construction in terms of required materials, and was used for the impact analysis of SSU6 construction. IMPLAN sector no. 443, Electric Services, was used for the impact analysis of SSU6 operation.

The multipliers and secondary impacts for the SSU6 project are listed in Table SOC-1-1. In summary, the secondary impacts associated with SSU6 construction would be approximately 570 jobs and over \$16 million in labor income in Imperial County. These impacts would occur once and would last roughly as long as the construction period (26 months) but would lag slightly behind construction. Some secondary impacts would also occur outside Imperial County.

The secondary impacts associated with SSU6 operation would be approximately 110 jobs and \$3.6 million in labor income on an annual basis in Imperial County. Secondary impacts associated with operation, some of which would occur outside Imperial County as well, would continue to occur as long as the SSU6 operates under the assumptions used in the model, attached herein.

**Table SOC-1-1**  
**SALTON SEA UNIT 6 ESTIMATED SECONDARY ECONOMIC IMPACTS**

Construction					
	Direct Effect	Indirect Effect	Induced Effect	Total Effect	Multiplier
Employment	265	339	230	806	3.0 <sup>a</sup>
Income (million \$)	\$30.0	\$11.0	\$5.9	\$47.0	1.6
Operation					
	Direct Effect	Indirect Effect	Induced Effect	Total Effect	Multiplier
Employment	69	62	48	173	2.5 <sup>a</sup>
Income (million \$)	\$5.9	\$2.4	\$1.2	\$9.5	1.6
Notes:					
Dollar figures are in 2002 dollars.					
The employment multipliers are relatively high because SSU6 local spending (the indirect effect) is expected to be relatively high.					

Cumulative impacts were assessed by researching other large-scale construction projects in the project area, where overlapping construction schedules would create a demand for workers that could not be met by labor in the Imperial County area. Construction of the SSU6 Project is expected to occur between the last quarter of 2003 and the last quarter of 2005, with peak construction activity occurring 2004. Three projects were identified in the area; however, only two projects had concurrent construction schedules with the SSU6 Project. Most construction of the State Route 78/111 Expressway (Brawley Bypass) would not coincide with construction of the SSU6 project, since construction would begin in 2004 and end in 2007. The project is also located 12 to 15 miles from the SSU6 Project. Due to the nature of the project, it is likely that both projects would require different types of skilled labor, and the concurrent construction schedules would not temporarily

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deplete certain types of trade labor and equipment. Cumulative impacts would not be considered significant.

Construction activities associated with the Imperial Irrigation District Water Conservation and Transfer Project/Habitat Conservation Plan are anticipated to begin by the end of 2003 and be on-going. Although the SSU6 Project would be constructed concurrent with some of the construction activities of the proposed water transfer and Habitat Conservation Plan, cumulative impacts would not be considered significant due to the nature of the project. There are no power/generating projects planned in the project vicinity.

**SOCIOECONOMICS**

**CEC SITING REGULATIONS & INFORMATION, Appendix B (g) (7) (A) (i):** The economic characteristics, including the economic base, fiscal resources, and a list of the applicable local agencies with taxing powers and their most recent and projected revenues.

**INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment SOC-2:** Please provide an estimate of project revenue. [CEC Staff has clarified that this comment was intended to obtain the County's projected revenues.]

**Response:**

**Imperial County General Fund  
Estimated Revenues for 2002-2003**

Revenue	2002-2003
Taxes	\$19,632,000
Licenses and Permits	\$1,109,478
Fines, Forfeitures, and Penalties	\$3,409,677
Use of Money and Property	\$1,369,750
Aid from Governmental Agencies	\$100,415,963
Charges for Current Services	\$5,669,046
Other Revenues	\$6,226,289
PY Fund Balance	6,174,569
Total Revenues	\$137,832,203

Source: Imperial County Auditor-Controller's Office, 2002.

Note: According to the Auditor-Controller, the projected revenue is only an estimate and has not been officially adopted by the County.

## SOCIOECONOMICS

**CEC SITING REGULATIONS & INFORMATION, Appendix B (g) (7) (B) (viii):** An estimate of the expenditures for locally purchased materials for the construction and operation phases of the project.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment SOC-3:** Please provide an estimate of the expenditures for locally purchased materials for the construction and operation phases of the project.

**Response:** AFC Page 5.9-8, Section 5.9.2.1.2, under "Construction", the last sentence should be clarified to state: "Construction capital expenditures (\$100 million of ***locally purchased*** equipment and materials) would generate about \$7.75 million in ***sales*** tax revenues, some of which would be returned to the County and the study area communities. ***The sales tax rate of 7.75 percent is comprised of the state sales tax rate (6.0 percent), the local sales tax rate (1.25 percent), and the district sales tax rate (0.5 percent for the Imperial County Local Transportation Authority).***"

AFC Page 5.9-8, Section 5.9.2.1.2, under "Operations", the last two sentences should be clarified to state: "***Additionally, the Applicant anticipates that approximately \$17 million in non-labor purchases (equipment and materials) would occur in the local area on an annual basis due to SSU6 operation, representing approximately 60 percent of total non-labor operation costs associated with SSU6. The associated increase in annual sales tax revenue would therefore be approximately \$1.3 million, which would be shared among the state, county and district as noted above in "Construction".***"

## **SOILS**

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (g) (1):** ...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment SOILS-1:** See SOILS-3

**Response:** See response to Soils-3.

## **SOILS**

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (g) (15) (c):** An assessment of the effects of the proposed project on soil resources and agricultural land uses.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment SOILS-2:** See SOILS-3

**Response:** See response to Soils-3.

## SOILS

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (g) (15) (C) (i):** The quantification of accelerated soil loss due to wind and water erosion.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment SOILS-3:** The AFC states that Universal Soil Loss and Chepil Wind Erosion Equations typically apply to agriculture operations and therefore were deemed inappropriate for the project. However, the USDA states that the Revised Universal Soil Loss Equation can be applied to agricultural land as well as construction sites. The soil loss for the pre-development, construction (w/ and w/out BMPs), and post-construction conditions must be calculated in order to design appropriate erosion control measures. Please provide these calculations or provide a clear explanation as to why the USDA's interpretation is not applicable.

**Response:** The Revised Universal Soil Loss Equation (RUSLE, Renard et al., 1977) is a model for estimating soil loss from most undisturbed lands experiencing overland flow, from lands undergoing disturbance and from newly or established reclaimed lands. RUSLE estimates soil loss from a hill slope caused by raindrop impact and overland flow (collectively referred to as "inter-rill erosion") plus rill erosion. Factors used to estimate soil loss include rainfall/runoff erosivity; soil erodibility; hill slope length and steepness; cover management; and soil conservation support practices.

The RUSLE was not considered appropriate for quantifying soil loss at the SSU6 Project area for the following reasons:

- The project area is basically level (<0.05 percent gradient) – the lowest gradient that can be entered in the RUSLE is 0.1 percent;
- The site receives very low precipitation (approximately 2.8 inches per year);
- The majority of soils have a moderate susceptibility to water erosion;
- The project area and surrounding land are actively farmed agricultural areas;
- Erosion control best management practices (BMPs) will be implemented to control water and wind erosion during construction activities, and impervious surfaces and/or BMPs will be placed on disturbed areas within the SSU6 Project area to control soil loss after construction; and,
- The project area is confined within raised bermed boundary roads.

## TRANSMISSION SYSTEM ENGINEERING

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (3) (A) TSE:** An interconnection study identifying the electrical system impacts and a discussion of the mitigation measures considered and those proposed to maintain conformance with NERC, WSCC, Cal-ISO or other applicable reliability or planning criteria based on load flow, post transient, transient, and fault current studies performed by or for the transmission owner in accordance with all applicable Cal-ISO or other interconnection authority's tariffs, operating agreements, and scheduling protocols.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment TSE-1:** In Section 1 of Appendix P, it was stated that there are pre-existing overload conditions on transmission facilities of IID. These require mitigation prior to the addition of Salton Sea Unit 6 (SSU6) Project. The identified impacts were not attributable to the SSU6 Project. Submit the following: a.) identification & location of affected element(s), b.) identification of electrical system impacts on corresponding element(s), and c.) discussion of proposed mitigation plan.

**Response:** Ten pre-existing overload conditions were identified in the Imperial Irrigation District's (IID) transmission system. IID power flow study was performed using "normal rating" (rate A). The transmission elements overloaded and the mitigation plan are described in the following table:

No.	TRANSMISSION ELEMENT	RATING MVA	AREA	CONT TYPE	CONT No.	Max. O/L PRE-PROJ CASE	Max. O/L POST-PROJ CASE	POST-PROJ CASE	MITIGATION	LOCATION
1	COACHELA - RAMON 230KV LINE	389	8	N-1	10	1.06	1.13	hs 1a 1	REDUCE GENERATION AT BLYTHE ENERGY PROJECT	RIVERSIDE COUNTY
2	RAMON - MIRAGE 230KV LINE	389	8	N-1	10	1.01	1.13	hs 1a 1	REDUCE GENERATION AT BLYTHE ENERGY PROJECT	RIVERSIDE COUNTY
3	COACHELLA- DEVERS 230KV LINE	389	8	N-1	11	1.01	1.13	hs 1a 1	REDUCE GENERATION AT BLYTHE ENERGY PROJECT	RIVERSIDE COUNTY
4	NILAND 161/92KV TRANSF.	75	8	N-1	40	1.21	1.43	hs 2a 2	REPLACE TRANSFORMER WITH A 125MVA	CITY OF NILAND
	NILAND 161/92KV TRANSF.	75	8	N-2	18	1.29	1.47	hs 2a 2	REPLACE TRANSFORMER WITH A 125MVA	CITY OF NILAND
5	COACHELA TO VANBUREN 92KV LINE	152	8	N-2	19	1.07	1.09	hs 1a	REDUCE GENERATION AT IID COLLECTOR SYSTEM	RIVERSIDE COUNTY
6	VANBUREN-AV42 92KV LINE	132	8	N-2	19	1.01	1.03	hs 1a 1	REDUCE GENERATION AT IID COLLECTOR SYSTEM	RIVERSIDE COUNTY
7	CV SUB 161/92KV TRANSFORMER	125	8	N-2	18	1.1	1.28	hs 2a 2	INSTALL A 125MVA PARALLEL 125MVA TRANSFORMER	RIVERSIDE COUNTY
8	NILAND- BLYTHE 161KV LINE	169	8	N-2	22	1.69	1.68	hs 2a	"RAS" TRIP GENERATION AT BLYTHE ENERGY PROJECT	IMPERIAL COUNTY
9	NILAND-CV SUB 161KV LINE	165	8	N-2	18	1.02	1.03	hs 2a	REDUCE GENERATION AT BLYTHE ENERGY PROJECT	IMPERIAL COUNTY
10	CV SUB 230/92KV TRANSFORMER CK2	150	8	N-3	25	1.39	1.47	hs 2a	"RAS" TRIP GENERATION AT COLLECTOR SYSTEM	RIVERSIDE COUNTY

Each IID pre-existing condition identified is described in Attachments 1 & 2.

## TRANSMISSION SYSTEM ENGINEERING

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (3) (A) TSE:** An interconnection study identifying the electrical system impacts and a discussion of the mitigation measures considered and those proposed to maintain conformance with NERC, WSCC, Cal-ISO or other applicable reliability or planning criteria based on load flow, post transient, transient, and fault current studies performed by or for the transmission owner in accordance with all applicable Cal-ISO or other interconnection authority's tariffs, operating agreements, and scheduling protocols.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

#### Comment TSE-1

(continued):

IID conducted the System Impact & Interconnection Studies that covered adjacent Utilities like WAPA, SCE, MWD & APS. Only the affected elements in the IID system were identified, described & locations were specified for the IID system. The following items are needed:

1. From Southern California Edison Company (SCE) – confirmation of power flow & stability studies conducted by IID concerning their power systems. Provide proposed mitigation plan for impacted element(s), if any. Submit letter or report stating that the mitigation is feasible and acceptable.
2. From San Diego Gas & Electric (SDG&E) – confirmation of power flow & stability studies conducted by IID concerning their power systems. Provide proposed mitigation plan for impacted element(s), if any. Submit letter or report stating that the mitigation is feasible and acceptable.
3. From Western Area Power Authority (WAPA) – confirmation of power flow & stability studies conducted by IID concerning their power systems. Provide proposed mitigation plan for impacted element(s), if any. Submit letter or report stating that the mitigation is feasible and acceptable.
4. From Metropolitan Water District of Southern California (MWD) – confirmation of power flow & stability studies conducted by IID concerning their power systems. Provide proposed mitigation plan for impacted element(s), if any. Submit letter or report stating that the mitigation is feasible and acceptable.
5. From Arizona Public Service Company (APS) – confirmation of power flow & stability studies conducted by IID concerning their power systems. Provide proposed mitigation plan for impacted element(s), if any. Submit letter or report stating that the mitigation is feasible and acceptable.

**Response:** Results of IID's System Impact Study were forwarded to surrounding utilities for their review. A letter of approval for SSU6 to interconnect to IID's transmission grid was also requested. IID has assisted CEOE in contacting APS, SDG&E, SCE, and

WAPA to request confirmation that the power flow and stability studies conducted by IID used reasonable assumptions and resulted in no undo impact on their respective systems. To date emails responses have been received from WAPA and APS. Response letters have been promised and are anticipated shortly. SCE is conducting a fault duty analysis for CE at this time and it will take 30 days for them to provide study results.

## TRANSMISSION SYSTEM ENGINEERING

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (3) (A) TSE:** An interconnection study identifying the electrical system impacts and a discussion of the mitigation measures considered and those proposed to maintain conformance with NERC, WSCC, Cal-ISO or other applicable reliability or planning criteria based on load flow, post transient, transient, and fault current studies performed by or for the transmission owner in accordance with all applicable Cal-ISO or other interconnection authority's tariffs, operating agreements, and scheduling protocols.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

#### Comment TSE-1

##### (continued):

Short circuit study was performed by IID only on their power systems, which indicate the impacted circuit breakers and the proposed mitigation plan. For the adjacent utilities, provide:

1. For SCE – Short circuit study & the proposed mitigation plan for impacted element(s), if any.
2. For SDG&E – Short circuit study & the proposed mitigation plan for impacted element(s), if any.
3. For WAPA – Short circuit study & the proposed mitigation plan for impacted element(s), if any.
4. For MWD – Short circuit study & the proposed mitigation plan for impacted element(s), if any.
5. For APS – Short circuit study & the proposed mitigation plan for impacted element(s), if any.

##### Response:

SCE will need to conduct a short circuit study for the Mirage-Devers area. A study agreement was signed and sent by SCE on September 13, 2002 for the CEOE's execution and the study will require 30 days for an estimated completion date of October 18, 2002.

IID has provided technical arguments indicating that the system interconnections of APS SDG&E, MWD, and WAPA are remote electrically from the SSU6 interconnection, thus no significant impacts are anticipated. Neighboring utilities have reviewed the system impact study and assumptions and are believed to concur in the results. They have been requested to provide their concurrence in writing to the CEC.

*Dated September 18, 2002*

---

**IID Disclaimer:** IID has provided technical arguments to substantiate the analysis that no significant impacts from SS#6 are anticipated to APS' Yuma area system. Additionally, at the Sept .10 meeting with CEC, IID clarified with Mr. McCuen from MWD that MWD does not interconnect with IID. This was confirmed in e-mail sent to Mr. McCuen on Sept.12.

IID cannot respond for the neighboring utilities as to impacts on their systems nor can IID force them to respond. IID can only request, as they have done so, that neighboring utilities concur. For forgoing reason, IID will not submit a letter to CEC requesting that short circuit studies for neighboring utilities be waived.

## TRANSMISSION SYSTEM ENGINEERING

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (2) (b) TSE/FD:** A full description of the facilities, if any, that are required for interconnection, including all such facilities beyond the point where the outlet line joins with the interconnected system and a full description of the environmental setting, environmental impacts, and any recommended mitigation measures proposed by the applicant for any required facilities beyond the point where the outlet joints with the interconnected system.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment TSE-2:** Due to pre-existing overload conditions on the IID system, furnish the following: a) Facility description where the impacted element/s is/are located. b) Full description of proposed mitigation measures c) Full description of the environmental setting & impacts on the proposed mitigation measures.

**Response:** Each IID pre-existing condition identified is described in Attachment 1.

The following is a full description of the proposed mitigation measures:

1. Avenue 58: replace the 161/92 kV, 125 MVA transformer with a 225 MVA transformer.
2. Niland: replace the 161/92 kV, 75 MVA transformer with the Avenue 58 125 MVA transformer.
3. Coachella Valley: Install a parallel 161/92 kV, 125 MVA transformer with the existing 161/92 KV, 125 MVA transformer.

For mitigation measures identified above, no environmental setting & impacts are anticipated since the recommended transformer additions/replacements will occur inside existing substations with sufficient spare land for expansions.

**TRANSMISSION SYSTEM ENGINEERING**

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (2) (b) TSE/FD:** A full description of the facilities, if any, that are required for interconnection, including all such facilities beyond the point where the outlet line joins with the interconnected system and a full description of the environmental setting, environmental impacts, and any recommended mitigation measures proposed by the applicant for any required facilities beyond the point where the outlet joints with the interconnected system.

**INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS****Comment TSE-2****(continued):**

IID conducted power flow and stability studies covering adjacent utilities like WAPA, SCE, SDG&E, MWD & APS. IID provided the full description of interconnection facilities, outlet lines, environmental impacts & settings, and the proposed mitigation plan. Adjacent utilities have to confirm the power flow & stability studies relative to their respective systems. If there are impacted element(s), affected utilities should submit: the same requirements in Items a.), b.) and c.) above.

**Response:**

Twelve pre-existing overload conditions were identified in systems external to IID. IID power flow study was performed using "normal rating" (rate A).

No.	TRANSMISSION ELEMENT	RATING MVA	AREA	CONT TYPE	CONT No.	Max. O/L PRE-PROJ CASE	Max. O/L POST-PROJ CASE	POST-PROJ CASE	LOCATION
1	BLYTHE-BUCK161 230KV LINE	563	14	N-2	22	1.95	1.96	hs_2a	CITY OF BLYTHE
2	BLYTHE-HEADGATE	111.5	14	N-2	22	1.38	1.42	hs_1a_1	CITY OF BLYTHE
3	BLYTHE-KNOB 161KV LINE	111.5	14	N-2	22	2.01	2	hs_2a	CITY OF BLYTHE
4	BUCK 230/161KV TRANSFORMERS	280+280	14	N-2	22	1.97	1.97	hs_2a	CITY OF BLYTHE
5	PARKER 230/161 TRANSFORMERS	126+126	14	N-2	22	1.04	1.11	ha_1a_1	CITY OF BLYTHE
6	HASSYAMP- N.GILA 500KV LINE	1212.4	22	N-1	4	1.04	1.03	hs_2a	ARIZONA
7	IMPRVLY-ROA 230KV LINE	408.3	22	N-1	3	1.68	1.7	hs_1a_2	IMPERIAL COUNTY
	IMPRVLY-ROA 230KV LINE	408.3	22	N-2	20	1.01	1.05	hs_1a_2	IMPERIAL COUNTY
8	MIRAGE-TAMARISK 115 KV LINE	217	24	N-0	NONE	1.06	1.07	hs_1a	RIVERSIDE COUNTY
	MIRAGE-TAMARISK 115 KV LINE	217	24	N-1	7 & 10	1.14	1.18 & 1.16	hs_1a_2	RIVERSIDE COUNTY
	MIRAGE-TAMARISK 115 KV LINE	217	24	N-2	21	1.49	1.58	hs_1a_1	RIVERSIDE COUNTY
9	TAP819-TAP809	120.5	24	N-1	9 & 11	1.02	1.02 & 1.01	hs_2a	RIVERSIDE COUNTY
	TAP819-TAP809	120.5	24	N-2	18 & 20	1.01	1.02 & 1.0	hs_2a	RIVERSIDE COUNTY
10	BLYTHE-BLYTHESC 161KVLINE	240	24	N-2	22	1.17	1.18	hs_1a	CITY OF BLYTHE
11	BLYTHESC-EAGLEMTN	186.8	24	N-2	22	1.21	1.22	hs_1a	CITY OF BLYTHE
12	MIRAGE 230/115 KV TRANSFORMER	280	24	N-2	21	1.13	1.19	hs_1a	RIVERSIDE COUNTY

Note- The IMPRVLY-ROA 230KV line rate have changed to 796 MVA, as well as the rating of the Parker 230/161 kV transformers from 126 to 170 MVA.

Each pre-existing overload condition identified is also described in Attachment 1&2.

## **TRANSMISSION SYSTEM ENGINEERING**

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (2) (b) TSE/FD:** A full description of the facilities, if any, that are required for interconnection, including all such facilities beyond the point where the outlet line joins with the interconnected system and a full description of the environmental setting, environmental impacts, and any recommended mitigation measures proposed by the applicant for any required facilities beyond the point where the outlet joins with the interconnected system.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment TSE-2**

**(continued):**

Adjacent utilities should perform a short circuit study on their respective power systems relative to the SSU6 Project. If there are impacted element(s), affected utilities should submit the same requirements in Items a.), b.) and c.) above.

**Response:**

SCE will need to conduct a short circuit study for the Mirage-Devers area. An study agreement was signed and sent by SCE on September 13, 2002 for the Applicant's execution and the study will require 30 days for an estimated completion date of October 18, 2002.

IID has provided information indicating that the system interconnections of APS SDG&E, MWD, and WAPA are remote electrically from the SSU6 interconnection, thus it is not anticipated that there will be significant fault duty impacts.

## TRANSMISSION SYSTEM ENGINEERING

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (b) (2) (c):** A detailed description of the design, construction, and operation of any electric transmission facilities, such as power lines, substations, switchyards, or other transmission equipment, which will be constructed or modified to transmit electrical power from the proposed power plant to the load centers to be served by the facility. Such description shall include the width of rights of way and the physical and electrical characteristics of electrical transmission facilities such as towers, conductors, and insulators. This description shall include power load flow diagrams which demonstrate conformance or nonconformance with utility reliability and planning criteria at the time the facility is expected to be placed in operation and five years thereafter; and

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment TSE-3:** Staff observes that the System Impact Study (SIS) with 2005 Heavy Summer base case addressed system impacts in the IID system, but does not show the impacts on the surrounding systems of WAPA (Lower Colorado River), SCE (Dever Mirage System) & APS (Yuma Area). Also, the SIS was not performed under 2005 Light Spring conditions.

**Response:** IID conducted a System Impact Study utilizing a 2005 Heavy Summer case for the IID system. IID further concluded that the 2005 Heavy Summer case stresses its system sufficiently that no further transmission issues would be determined by studying the system for the Light Spring conditions. IID's conclusion is based on years of experience, the unique loading conditions of its system, and studies conducted for other generation additions. IID conducted the Study with the entire output delivered internal to IID, but tested impacts on external systems by varying external purchases, hence the flows on the interties, to demonstrate that the impacts on surrounding systems are negligible. As discussed in the Responses above, neighboring utilities have been requested to verify that they concur with the analysis. A Waiver of Request for Light Spring Studies for Salton Sea Unit 6 Impact Studies was provided separately.

## **TRANSMISSION SYSTEM ENGINEERING**

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (g) (18) (A):** The locations and a description of the existing switchyards and overhead and underground transmission lines that would be affected by the proposed project.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment TSE-4:** Furnish location & description of impacted power systems elements due to the stated pre-existing conditions in section 1 of appendix P and for affected facilities due to the project.

**Response:** In Attachment 1 (response to TSE-2) each of the pre-existing conditions are listed along with the mitigation measures. Included in the Attachment is a list of the impacted power systems elements for the affected facilities.

**TRANSMISSION SYSTEM ENGINEERING**

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (I) (2) (A):**

**INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment TSE-5:** See comments on Appendix B (b) (2) (c)

**Response:** See the response to TSE-3 above.

IMPERIAL IRRIGATION DISTRICT  
POWER RESOURCES  
POWER DEPARTMENT

FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
Bernard Raemty	Clarissa Cisneros
COMPANY:	DATE:
Cal Energy	9/18/02
FAX NUMBER:	TOTAL NO. OF PAGES INCLUDING COVER:
(760) 348-4073	10
PHONE NUMBER:	SENDER'S PHONE NUMBER:
(760) 348-4066	(760) 339-0866
RE:	SENDER'S FAX NUMBER:
Letters to Neighboring Utilities & Contact Information	(760) 339-0867

☐ URGENT ☒ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

Bernard,

Attached are the letters that were sent to the neighboring utilities and MWD. The contact information is as follows:

APS - Rex Stulting	(602) 250-1644
MWD - Gary Chinn	(213) 217-6000
SCE - Patricia Mayfield	(602) 302-9644
SDG&E - David Korinek	(858) 654-1580
WAPA - Jim Charters	(602) 352-2586

90+ N. DOGWOOD RD.  
EL CENTRO, CA 92243



# IMPERIAL IRRIGATION DISTRICT

OPERATING HEADQUARTERS • P. O. BOX 937 • IMPERIAL, CALIFORNIA 92251

July 17, 2002

San Diego Gas & Electric Company  
Mr. David M. Korinek  
Transmission Planning, Manager  
8316 Century Park Court (CP52A)  
San Diego, CA 92123

Dear Mr. Korinek:

Subject: Salton Sea Obsidian, Unit 6

Imperial Irrigation District (IID), as the Interconnecting Utility for the subject project, provides the following information as specified under the Comprehensive Progress Report Section of the WECC Progress Report Policies and Procedures:

1. a) The Cal Energy (CE) Obsidian Energy, Salton Sea Unit 6 Project will interconnect to a new IID switching station. The new switching station will loop into a 161kV transmission line between IID's El Centro Switching Station and Ave. 58 Station. Also, a 161kV single circuit line will interconnect the new IID Switching Station to IID's Midway Station new 161kV bus.  
  
b) The planned operating date is the 1<sup>st</sup> quarter of 2005.  
  
c). Cal Energy (CE) owns the facility.
2. IID has entered into a Power Sales Agreement with CE Obsidian Energy LLC ("Cal Energy") to purchase contract capacity of up to 170MW and associated Energy from the proposed Cal Energy Salton Sea Unit 6 ("SSU6") electric generation facility for a period of twenty years.
3. The expected net output of the plant after station service usage will be approximately 185MW. The study assumes that 15MW in excess of IID's contract capacity would be integrated into IID's system as part of a prospective swap between IID and SSU6.

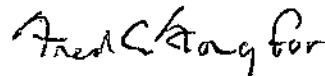
Mr. Korinek

Page 2

4. One-line diagram is provided in the attached System Impact Study report.
5. Modeling data for computer simulation is provided in the attached System Impact Study.
6. This project will not affect existing WECC transfer path ratings.
7. The project was studied under six system conditions of 2005 heavy summer net interchange.
8. There are three (3) 161/92kV transformers within IID's control area identified to have loading criteria violations. The project does not have significant impact on post transient voltage deviations. There were also no problems found in the transient stability studies.
9. Representative power flow and stability cases that demonstrate compliance with WECC Reliability Criteria are included in the attached System Impact Study.
10. Representative power flow outage results and stability plots that demonstrate compliance with WECC Reliability Criteria are included in the attached System Impact Study.
11. A project milestone schedule has not been developed at this time.

Please provide comments within thirty (30) days. If you have any questions, please contact me at (760) 339-9463.

Sincerely,



EPIFANIO G. MARTINEZ  
Superintendent, General  
Power Engineering Services

CC: J. Steffen - IID  
R. White - IID  
F. Barbera - IID  
J. Sandoval - IID  
D. Barajas - IID



# IMPERIAL IRRIGATION DISTRICT

OPERATING HEADQUARTERS • P. O. BOX 937 • IMPERIAL, CALIFORNIA 92251

July 17, 2002

Southern California Edison Company  
 Ms. Patricia L. Mayfield  
 Manager, Regulatory, Planning and Business Development  
 P.O. Box 800  
 2244 Walnut Grove Avenue  
 Rosemead, CA 91770

Dear Ms. Mayfield:

Subject: Salton Sea Obsidian, Unit 6

Imperial Irrigation District (IID), as the Interconnecting Utility for the subject project, provides the following information as specified under the Comprehensive Progress Report Section of the WECC Progress Report Policies and Procedures:

1. a) The Cal Energy (CE) Obsidian Energy, Salton Sea Unit 6 Project will interconnect to a new IID switching station. The new switching station will loop into a 161kV transmission line between IID's El Centro Switching Station and Ave. 58 Station. Also, a 161kV single circuit line will interconnect the new IID Switching Station to IID's Midway Station new 161kV bus.
- b) The planned operating date is the 1<sup>st</sup> quarter of 2005.
- c). Cal Energy (CE) owns the facility.
2. IID has entered into a Power Sales Agreement with CE Obsidian Energy LLC ("Cal Energy") to purchase contract capacity of up to 170MW and associated Energy from the proposed Cal Energy Salton Sea Unit 6 ("SSU6") electric generation facility for a period of twenty years.
3. The expected net output of the plant after station service usage will be approximately 185MW. The study assumes that 15MW in excess of IID's contract capacity would be integrated into IID's system as part of a prospective swap between IID and SSU6.

Ms. Mayfield

Page 2

4. One-line diagram is provided in the enclosed System Impact Study report.
5. Modeling data for computer simulation is provided in the enclosed System Impact Study.
6. This project will not affect existing WECC transfer path ratings.
7. The project was studied under six system conditions of 2005 heavy summer net interchange.
8. There are three (3) 161/92kV transformers within IID's control area identified to have loading criteria violations. The project does not have significant impact on post transient voltage deviations. There were also no problems found in the transient stability studies.
9. Representative power flow and stability cases that demonstrate compliance with WECC Reliability Criteria are included in the enclosed System Impact Study.
10. Representative power flow outage results and stability plots that demonstrate compliance with WECC Reliability Criteria are included in the enclosed System Impact Study.
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Please provide comments within thirty (30) days. If you have any questions, please contact me at (760) 339-9463.

Sincerely,



EPIFANIO G. MARTINEZ  
Superintendent, General  
Power Engineering Services

CC: J. Steffen - IID  
R. White - IID  
F. Barbera - IID  
J. Sandoval - IID  
D. Barajas - IID



# IMPERIAL IRRIGATION DISTRICT

OPERATING HEADQUARTERS • P. O. BOX 937 • IMPERIAL, CALIFORNIA 92251

July 17, 2002

Western Area Power Administration  
Mr. Jim Charters  
Manager, Resource/Planning Department  
615 South 43<sup>rd</sup> Avenue  
Phoenix, AZ 85009

Dear Mr. Charters:

Subject: Salton Sea Obsidian, Unit 6

Imperial Irrigation District (IID), as the Interconnecting Utility for the subject project, provides the following information as specified under the Comprehensive Progress Report Section of the WECC Progress Report Policies and Procedures:

1. a) The Cal Energy (CE) Obsidian Energy, Salton Sea Unit 6 Project will interconnect to a new IID switching station. The new switching station will loop into a 161kV transmission line between IID's El Centro Switching Station and Ave. 58 Station. Also, a 161kV single circuit line will interconnect the new IID Switching Station to IID's Midway Station new 161kV bus.
- b) The planned operating date is the 1<sup>st</sup> quarter of 2005.
- c). Cal Energy (CE) owns the facility.
2. IID has entered into a Power Sales Agreement with CE Obsidian Energy LLC ("Cal Energy") to purchase contract capacity of up to 170MW and associated Energy from the proposed Cal Energy Salton Sea Unit 6 ("SSU6") electric generation facility for a period of twenty years.
3. The expected net output of the plant after station service usage will be approximately 185MW. The study assumes that 15MW in excess of IID's contract capacity would be integrated into IID's system as part of a prospective swap between IID and SSU6.

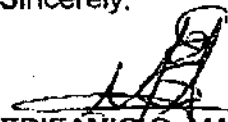
Mr. Charters

Page 2

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5. Modeling data for computer simulation is provided in the enclosed System Impact Study.
6. This project will not affect existing WECC transfer path ratings.
7. The project was studied under six system conditions of 2005 heavy summer net interchange.
8. There are three (3) 161/92kV transformers within IID's control area identified to have loading criteria violations. The project does not have significant impact on post transient voltage deviations. There were also no problems found in the transient stability studies.
9. Representative power flow and stability cases that demonstrate compliance with WECC Reliability Criteria are included in the enclosed System Impact Study.
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11. A project milestone schedule has not been developed at this time.

Please provide comments within thirty (30) days. If you have any questions, please contact me at (760) 339-9463.

Sincerely,

  
**EPIFANIO G. MARTINEZ**  
 Superintendent, General  
 Power Engineering Services

CC: J. Steffen - IID  
 R. White - IID  
 F. Barbera - IID  
 J. Sandoval - IID  
 D. Barajas - IID

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ELECTRICAL ENGINEERS

PAGE 01



# IMPERIAL IRRIGATION DISTRICT

OPERATING HEADQUARTERS • P.O. BOX 937 • IMPERIAL, CALIFORNIA 92251

August 29, 2002

Mr. Rex Stulting  
Arizona Public Service Company  
Transmission Planning/Engineering Manager  
502 S. Second Avenue  
Mail Station 2259  
Phoenix, AZ 85003

Dear Mr. Stulting:

Subject: Salton Sea Obsidian, Unit 6

Thank you for your prompt response via e-mail to the Salton Sea Obsidian, Unit 6 Comprehensive Report that you received through the WECC TSS group. Enclosed you will find the full Salton Sea Obsidian, Unit 6 Report.

Thank you very much for your cooperation.

Sincerely,

EPIFANIO G. MARTINEZ  
Superintendent, General  
Engineering Services  
Power Department

CC: J. Stulting - 107  
R. White - 107  
F. Buehler - 107  
J. Buehler - 107  
D. Buehler - 107

WECC - Technical Studies Subcommittee - Members

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Weston L. Williams  
Mgr., Grid Interconnection  
& Contract Development

September 13, 2002

Mr. Bernard Raemy  
Business Development Manager  
CE Obsidian Energy LLC  
7030 Gentry Road  
Calipatria, CA 92233

Dear Mr. Raemy:

On August 14, 2002, we received MidAmerican Energy Company's request, on behalf of CE Obsidian Energy LLC ("Obsidian Energy"), for SCE to perform a transmission study to determine any impacts of Obsidian Energy's proposed Salton Sea 6 Project (a 185 MW geothermal generating facility to be connected to IID's 161kV transmission system near Midway Substation) to SCE's electrical system and the ISO Controlled Grid. Based on our review of the request and the associated technical data, we have determined that a short circuit duty analysis of the Salton Sea 6 Project will be required.

Attached for execution by Obsidian Energy is a Transmission Planning Study Agreement ("Agreement"). The Agreement sets forth the terms and conditions for SCE to perform the study and for Obsidian Energy to reimburse SCE for the cost of the study. The purpose of the study is to determine the short circuit duty impacts of the Salton Sea 6 Project on SCE's electrical system and the ISO Controlled Grid. The estimated cost of the Study is \$15,000, which MidAmerican Energy Company previously transmitted to SCE in the form of check no. 17329, dated August 9, 2002. The study is expected to take thirty (30) calendar days to complete.

Please have both originals of the attached Agreement executed by the appropriate person at Obsidian Energy and return one original to me by September 30, 2002. If the Agreement is not returned within this time then the offer reflected in the Agreement will be rescinded and the Agreement will be of no effect. SCE will commence the study upon receipt of the executed Agreement.

Please call me at (626) 302-9615 or John Tucker at (626) 302-8623 if you have any questions regarding the Agreement.

Sincerely,

A handwritten signature in black ink, appearing to read "Weston L. Williams", written over a horizontal line.

Weston L. Williams

Attachment

C: O. D. Stevens (MidAmerican Energy Company) w/ attachment

P.O. Box 800  
2244 Walnut Grove Ave.  
Rosemead, CA 91770  
626-302-9615/PAX 29615  
Fax 626-302-1152  
weston.williams@sce.com

**CE OBSIDIAN ENERGY LLC -  
SOUTHERN CALIFORNIA EDISON COMPANY  
TRANSMISSION PLANNING STUDY AGREEMENT**

CE Obsidian Energy LLC ("Obsidian Energy") is planning to construct the Salton Sea 6 Energy Project ("Salton Sea 6 Project") near the south end of the Imperial Valley's Salton Sea in California. The Salton Sea 6 Project will be interconnected to the Imperial Valley Irrigation District's ("IID") transmission system near IID's Midway Substation. IID has performed a system impact study that determined the impacts of the Salton Sea 6 Project on IID's transmission system. IID's transmission system is interconnected to the ISO Controlled Grid at Mirage Substation. In a letter dated August 13, 2002, Obsidian Energy requested that Southern California Edison Company ("SCE") perform a transmission planning study ("Study") to identify the impacts of the Salton Sea 6 Project on SCE's electrical system and the ISO Controlled Grid. SCE will perform the Study in accordance with the terms below.

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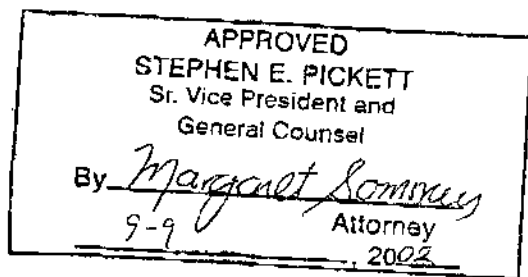
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Name: A. L. Grant  
Title: Vice President  
Southern California Edison Company

ACCEPTED AND AGREED to this 17th day of Sept., 2002

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Name: Edward J. Heinrich  
Title: President  
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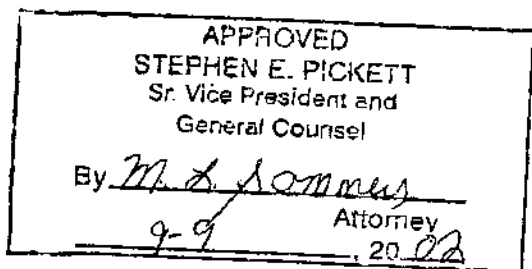
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Southern California Edison Company

ACCEPTED AND AGREED to this 17th day of Sept., 2002

By: 

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Title: President  
CE Obsidian Energy LLC



Weston L. Williams  
Mgr., Grid Interconnection  
& Contract Development

September 13, 2002

Mr. Bernard Raemy  
Business Development Manager  
CE Obsidian Energy LLC  
7030 Gentry Road  
Calipatria, CA 92233

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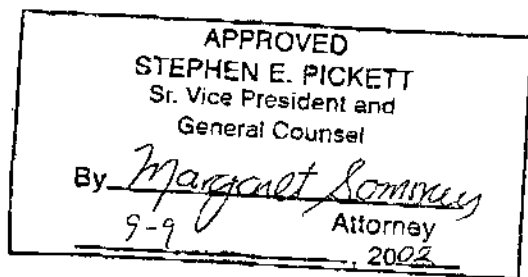
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- b. As further described in Mid American Energy Company's letter (on behalf of Obsidian Energy) dated August 13, 2002 and e-mails dated 8/19/02 and 8/21/02, the Salton Sea 6 Project will connect to IID's 161kV transmission system at a new substation to be constructed by IID ("MAE Substation"). The Salton Sea 6 Project will connect to MAE Substation via a double-circuit 161kV line (1033 ACSR conductors) with an approximate length of 500 feet.
- c. MAE Substation will be connected to IID's Midway Substation via a new single circuit 161kV line (1033 ACSR conductor) with an approximate length of 15 miles; and to IID's existing 161kV "L" line via a double-circuit (1033 ACSR conductors) 161kV line with an approximate length of 16 miles. The point at which the new double-circuit will be looped into the "L" line will be approximately 56 miles south of IID's Avenue 58 Substation.
- d. Output from the Salton Sea 6 Project will serve load within IID's control area. No export to the ISO Controlled Grid is assumed.

- e. A forecast commercial operating date of April 2005.
  - f. The technical data supplied by Mid American Energy Company (on behalf of Obsidian Energy) for the Salton Sea 6 Project is accurate and correct.
  - g. Projects with interconnection applications preceding Obsidian Energy are assumed in-service; however, potential system enhancements or modifications resulting from such projects, if any, are not assumed.
4. **Time Required for Completion:** SCE will use due diligence to complete the Study within thirty (30) calendar days following receipt of a fully executed copy of this Agreement and payment pursuant to Section 9 of this Agreement.
5. **Additional Time for Completion:** At any time that SCE determines that the Study cannot be completed with thirty (30) calendar days in accordance with Section 4 of this Agreement, SCE shall notify Obsidian Energy and provide an estimated completion date, along with an explanation of the reasons why additional time is required to complete the Study.
6. **Exchange of Information:** SCE and Obsidian Energy shall confer with one another as necessary to exchange information that will minimize the use of assumptions in the Study, and to provide for the most accurate analysis possible with the information available at the time the Study is performed.
7. **Results Based on Information Available at Time of Study:** Substantial portions of technical data and assumptions used to perform the Study, such as system conditions, existing and planned generation, and unit modeling, may change after SCE provides the Study results to Obsidian Energy. Study results will reflect available data at the time SCE provides the Study to Obsidian Energy. Additionally, Study results will

reflect the ISO Tariff, rules and protocols in effect at the time SCE provides the Study to Obsidian Energy. Such Tariff, rules and protocols are subject to change. SCE shall not be responsible for any additional costs (including without limitation, costs of new or additional facilities, system upgrades, or schedule changes) that may be incurred by Obsidian Energy as a result of changes in such data, assumptions, or the ISO Tariff, rules and protocols which occur following provision of this Study.

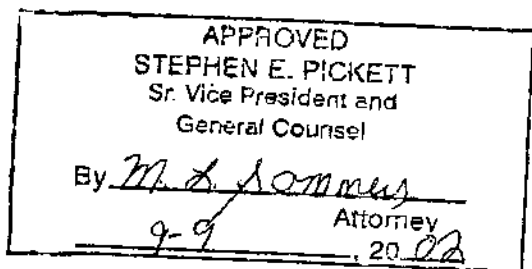
8. **New Study at Obsidian Energy's Cost:** In the event that a new Study or revision or reconsideration of the Study is required to reflect changes which occur following provision of this Study, then Obsidian Energy shall enter into a separate agreement providing that it shall reimburse SCE for the costs of such new or revised study.
9. **Payment:** Obsidian Energy shall pay the full cost for SCE to perform the Study as follows:
  - a. Obsidian Energy shall reimburse SCE for SCE's cost of performing the Study; provided, however, that Obsidian Energy shall not be required to reimburse SCE for amounts in excess of \$15,000, except as provided in Section 10 of this Agreement.
  - b. Obsidian Energy shall advance to SCE \$15,000 for the Study upon execution of this Agreement.
  - c. SCE shall refund to Obsidian Energy without interest, any amounts received by SCE which exceed the cost of the Study, even if terminated pursuant to Section 10 or 12 of this Agreement.
10. **Increased Costs:** If at any time SCE determines that the Study is expected to cost more than \$15,000, SCE shall notify Obsidian Energy and provide an estimate of any

additional costs. Upon receipt of such notice, Obsidian Energy shall either: (i) request that SCE terminate the Study; or (ii) provide a written request to SCE to continue the Study, and agree to pay any additional costs to SCE. SCE shall be under no obligation to incur costs in excess of \$15,000 for the Study, unless and until it receives a request to continue the Study pursuant to this Section 10, and agreement from Obsidian Energy to pay costs in excess of \$15,000.

11. **Records and Accounts:** SCE shall maintain records and accounts of all costs incurred in performing the Study in sufficient detail to allow verification of all costs incurred, including, but not limited to, labor and associated labor burden costs, materials and supplies, outside services, and administrative and general expenses. Obsidian Energy shall have the right, upon reasonable notice, within a reasonable time at SCE's offices and at its own expense, to audit SCE's records as necessary and as appropriate in order to verify costs incurred by SCE. Any audit requested by Obsidian Energy shall be completed, and written notice of any audit dispute provided to SCE's representative, within one hundred eighty (180) days following receipt by Obsidian Energy of SCE's notification of the final Study costs.
12. **Termination Upon Demand:** Obsidian Energy may demand that SCE terminate the Study at any time. Immediately following receipt of such written request of such termination from Obsidian Energy, SCE shall terminate the Study as requested. In such case, Obsidian Energy shall reimburse SCE only for costs actually incurred or irrevocably committed to be incurred for the performance of the terminated Study. If Obsidian Energy so requests in its notice of termination, SCE shall submit to Obsidian Energy the results of the incomplete Study in a report including assumptions

and calculations available at the time SCE receives Obsidian Energy's termination notice.

13. **Signature Clause:** This Agreement shall become effective upon the date the fully executed Agreement and payment pursuant to Section 9 are received by SCE. If SCE does not receive the fully executed Agreement and payment within 10 business days of Obsidian Energy's receipt, then the offer reflected in this Agreement will be rescinded and this Agreement will be of no effect.



By: 

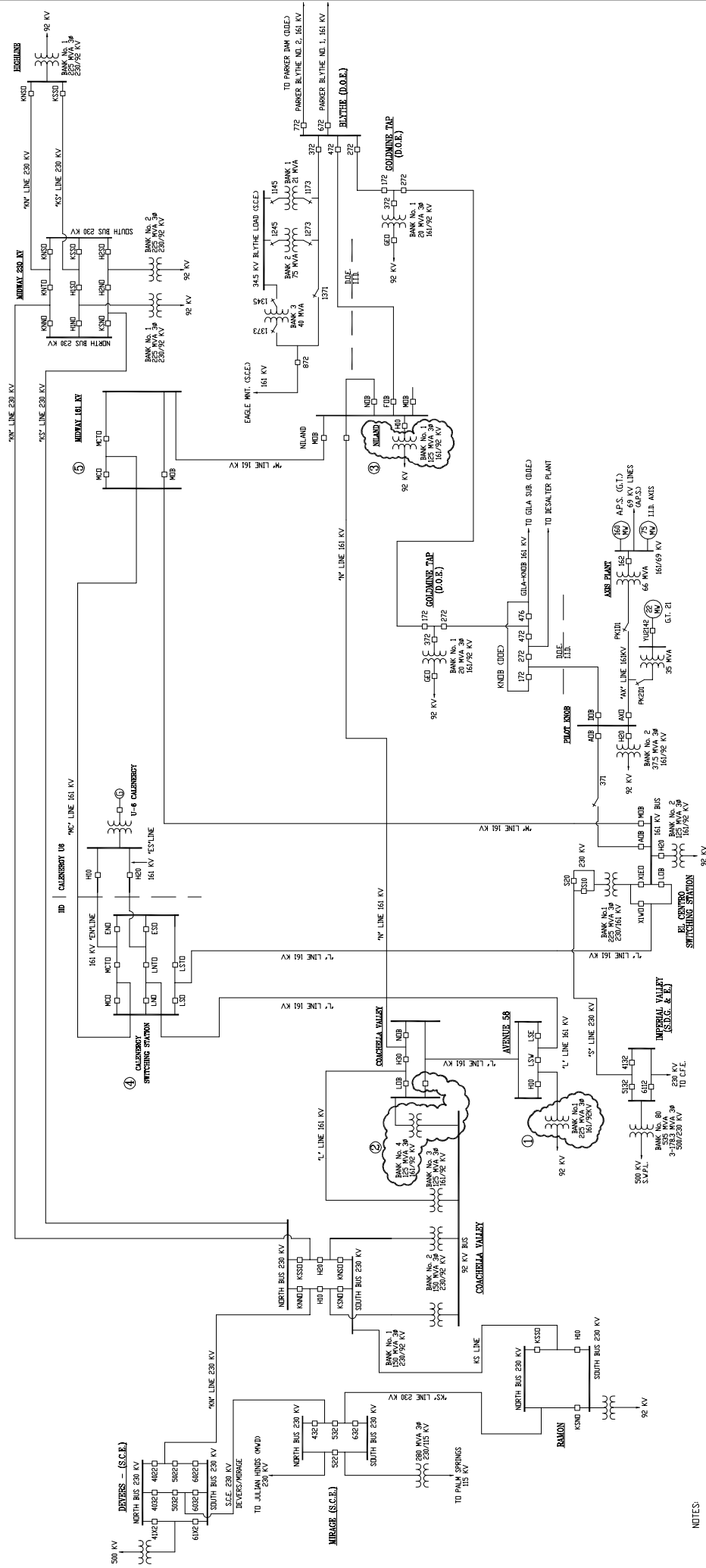
Name: A. L. Grant  
Title: Vice President  
Southern California Edison Company

ACCEPTED AND AGREED to this 17th day of Sept., 2002

By: 



Name: Edward J. Heinrich  
Title: President  
CE Obsidian Energy LLC

ATTACHMENT "3": Detail Description of Mitigation Measures



- NOTES:
- 1- REPLACE THE EXISTING 125 MVA TRANSFORMER FOR 225 MVA AT AVE. 58 SUBSTATION.
  - 2- INSTALL THE TRANSFORMER FROM AVE. 58 125 MVA AT COACHELLA VALLEY SUBSTATION.
  - 3- REPLACE THE EXISTING 75 MVA TRANSFORMER FOR 125 MVA AT NILAND SUBSTATION.
  - 4- NEW 161 KV BREAKER AND HALF SWITCHING STATION
  - 5- NEW 161 KV RING CONNECTION

PRE-CONSTRUCTION  
(U-6 CALENERGY SERVICE PLAN AND IMPACT OF THE SYSTEM)

																			
IMPERIAL IRRIGATION DISTRICT																			
IMPERIAL, CALIFORNIA																			
POWER DEPARTMENT																			
SECTIONALIZING DIAGRAM																			
230/161 KV SYSTEM																			
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Sep-18-02 11:14am From-CAL ENERGY

7603484021

T-687 P.002/003 F-114



## **CE Obsidian Energy LLC**

**A Limited Liability Company**

September 12, 2002

Mr. Al McCuen  
Program Manager, Transmission System Engineer  
California Energy Commission  
1516 9<sup>th</sup> Street, MS 40  
Sacramento, CA 95814

Re: Salton Sea Unit 6: Waiver of Request for Light Spring Studies for Salton Sea Unit 6 Impact Studies

Dear Mr. McCuen:

CE Obsidian Energy LLC (CEOE) request a waiver to the Light Spring system impacts study requirement with respect to the Salton Sea Unit 6 (SSU6) facility interconnection with IID's transmission grid. The waiver request is based on the following:

- IID entered into a 20-year Power Purchase Agreement with CEOE to receive output from the SSU6 facility to serve native load as an internal resource.
- Because of hot weather conditions in the Imperial Valley area, IID typically evaluates system impacts under Heavy Summer conditions since most of IID's transmission issues are related to thermal limits. Typically, Light Spring conditions are reviewed where stability issues are limiting system operations (limited resources or inertia).
- In IID's impact studies the net interchanges were studied at various levels to simulate different operating conditions for meeting IID's native load and to test the sensitivity of a change in supply from outside IID. A minimal (negligible) increase in IID's interties flows was observed.
- SSU6 is located in the center of IID's system, electrically remote from IID's interfaces with other utilities. Its location, and the fact that IID is purchasing most of the power under contract, diminishes the impact that SSU6 has on external transmission.

A Non-recourse Affiliate of

**MIDAMERICAN ENERGY HOLDINGS COMPANY**  
7030 Gentry Road, Calipatria, California 92233  
(760) 348-4066 Fax: (760) 348-4073

URS CORPORATION

SEP. 18. 2002 12:17PM

[6689 ON XR/XL] 21:11 MEM 20/81/60  
Sep-18-02 11:14am From-CAL ENERGY

7603484021

T-687 P.003/003 F-114

Page 2

Please do not hesitate to contact me at (760) 348-4066, or Mr. Sandoval from IID at 760-339-0870, with any question or comment concerning this request.

Sincerely,



Bernard Raemy  
Project Development Manager

Cc:

Bob Worl, CEC  
Jeffery Hansen, MEHC  
Dale Stevens, MEHC  
Frank Barbera, IID  
Juan-Carlos Sandoval, IID  
Eddie Lutz, IID  
David Barajas, IID

An Affiliate of

**MIDAMERICAN** ENERGY HOLDINGS COMPANY  
302 South 36<sup>th</sup> Street, Suite 400, Omaha, Nebraska 68131  
(402) 341-4500 Fax: (402) 231-1668



## **CE Obsidian Energy LLC**

**A Limited Liability Company**

September 18, 2002

Mr. Al McCuen  
Program Manager, Transmission System Engineer  
California Energy Commission  
1516 9<sup>th</sup> Street, MS 40  
Sacramento, CA 95814

Re: Mitigation Plan for Items Identified in the SSU6 Project Impact Study:

Dear Mr. McCuen:

This letter addresses the request of defining the mitigation plan for the facilities identified in the System Impact Study (SIS) of CEOE SSU6 Project performed by Imperial Irrigation District (IID). The SIS was based in a set of assumptions and system conditions described in the report. Some of the items identified in the SIS include impacts that may be mitigated with the Blythe Energy Project Phase 2 final plan of service.

IID has been reviewing many options to meet the continued load growth in and around the Coachella Valley area. The addition of the SSU6 Project on the IID's 161kV system adds additional emphasis and advancement of facilities planned for this region. The following represents the current plan to mitigate the impacts to the IID system due to resource additions and the expected construction year:

- 2004 - Ave 58 Substation; replace the existing 161/92 KV, 125 MVA transformer with a 225 MVA transformer.
- 2004 - Niland Substation; replace the existing 161/92 KV, 75 MVA transformer with the Ave 58 Substation 125 MVA transformer.
- 2004 - Coachella Valley substation; install a parallel 161/92 KV, 125 MVA transformer with the existing 161/92 KV, 125 MVA transformer.

This plan addresses the bulk of the facility overloads in the impact study and represents IID's realistic "budget" view to meet the requirements of the SSU6 Project.

Page 2

Please do not hesitate to contact me at (760) 348-4066, or Mr. Epifanio Martinez ( 760-339-9463, e-mail [egmartinez@iid.com](mailto:egmartinez@iid.com)) or Mr. David Barajas (760-339-9093, e-mail [dlbarajas@iid.com](mailto:dlbarajas@iid.com)) from IID with any question or comment.

Sincerely,



Bernard Raemy  
Project Development Manager

Cc:

Bob Worl, CEC  
Jeffery Hansen, MEHC  
Dale Stevens, MEHC  
Frank Barbera, IID  
Juan-Carlos Sandoval, IID  
Eddie Lutz, IID  
David Barajas, IID

An Affiliate of

**MIDAMERICAN** ENERGY HOLDINGS COMPANY  
302 South 36<sup>th</sup> Street, Suite 400, Omaha, Nebraska 68131  
(402) 341-4500 Fax: (402) 231-1668

## **TRAFFIC AND TRANSPORTATION**

**CEC SITING REGULATIONS & INFORMATION, Appendix B (g) (5) (B):** Bus routes.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment TRA-1:** Please describe any bus routes serving the project vicinity and identify these routes on the 1:24,000 topographic maps.

**Response:** According to Kathy Williams (Personal Communication, September 2002) of the Imperial County Department of Public Works, there are no public transit routes within three miles of the project site. The communities of Calipatria and Niland are serviced by public transportation but are distant from the project site. No expansion of public transit service is planned for the project vicinity.

**TRAFFIC AND TRANSPORTATION**

**CEC SITING REGULATIONS & INFORMATION, Appendix B (g) (5) (B) (v):** Estimated percentage of current traffic flows for passenger vehicles and trucks.

**INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment TRA-2:** Please provide percentage of current traffic flows for passenger vehicles and trucks for local roads.

**Response:** See Truck traffic information below

Roadway	Location	Classification	Average Daily Traffic	Truck Traffic	Truck Traffic %
Sinclair Road [1]	Between SR 111 and Gentry Road	Collector, 2-lane	1160	371	32% [5]
McKendry Road [2]	Between Severe Road and Gentry Road	Local, 2-lane	53	12	22% [6]
Lindsey Road [2]	Between Gentry Road and Severe Road	Local, 2-lane	823	265 [4]	32% [5]
Eddins Road [1]	Between SR 111 and Gentry Road	Collector, 2-lane	1354	433	32% [5]
Severe Road [2]	Between McKendry Road and Lindsey Road	Local, 2-lane	52	11	22% [6]
Boyle Road [3]	Between McKendry Road and Peterson Road	Local, 2-lane	100 (est.)	22	22% [6]
Gentry Road [1]	Between Sinclair Road and Lindsey Road	Collector, 2-lane	1350	432	32% [5]

[1] From Imperial County Traffic Count Database

[2] New counts taken on January 2002

[3] Estimated counts approximately double Severe Road counts, taken on January 2002.

[4] Truck classification counts taken on January 15, 2002 (183 Light Trucks + 82 Heavy Trucks = 265 Total)

[5] Based on proportion of Total Trucks taken on January 15, 2002 at Lindsey Road (265 Trucks / 823 Total Traffic = 32%)

[6] Based on proportion of Light Trucks only taken on January 15, 2002 at Lindsey Road (183 Light Trucks / 823 Total Traffic = 22%)

## TRAFFIC AND TRANSPORTATION

**CEC SITING REGULATIONS & INFORMATION, Appendix B (g) (5) (E):** A discussion of project-related hazardous materials to be transported to or from the project during construction and operation of the project, including the types, estimated quantities, estimated number of trips, anticipated routes, means of transportation, and any transportation hazards associated with such transport.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

#### Comment TRA-3:

**Response:** During the construction period, the anticipated route for construction-related traffic would be via SH 111, then exit west onto Sinclair Road, south on Gentry Road, west on McKendry Road and south on Boyle Road towards the construction laydown area.

As discussed in Section 5.14 of the AFC document, hazardous materials used during the construction phase would be limited to vehicle fuel and lubricants cleaning solvent, paint products, and small volumes of flushing and cleaning fluids (phosphate or nitrate solutions), antifreeze, and pesticides. During construction activities requiring heavy construction equipment use, fuel will be made available on site with daily deliveries of fuel in 500 gallon container/tank. All other construction-related materials that were discussed will be delivered on an "As needed" basis. During the final phase of construction, it is estimated that there will be approximately twelve truck deliveries containing paint in 55 gallon drums.

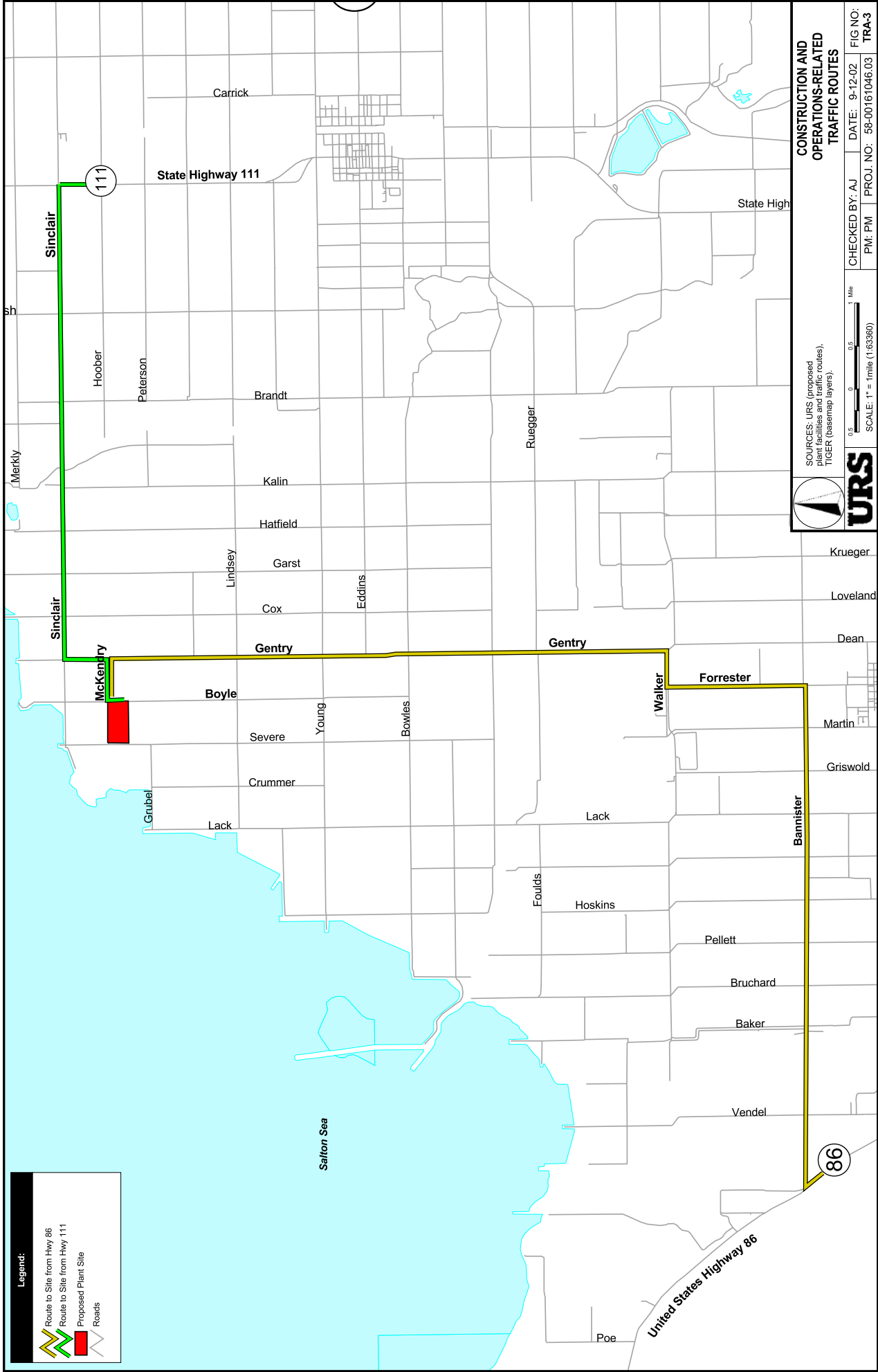
During normal plant operations, the anticipated route for operations related deliveries will be via SH 111, exit west onto Sinclair Road, south on Gentry Road, and west on McKendry Road towards the plant delivery entrance. Other operations related traffic originating from southwest via SH 78/86 are anticipated to exit Bannister Road and travel east to Forrester, north on Forester Road, east on Walker Road, north on Gentry Road, and west on McKendry Road towards the plant delivery entrance.

Refer to the following figure for construction and operations-related traffic routes.

The estimated quantities of construction and operations related hazardous materials that will be transported to the project site are shown in the following table.

**ANTICIPATED HAZARDOUS MATERIALS DELIVERIES  
DURING CONSTRUCTION AND OPERATION OF SALTON SEA UNIT 6**

<b>Material</b>	<b>Delivery Schedule (Frequency)</b>	<b>Delivery Quantity</b>
<b>Construction</b>		
Fuels	Daily, As Needed	500 gal
Lubricants	As Needed	55 gal
Flushing/Cleaning fluids	As Needed	55 gal
Solvents	As Needed	55 gal
Paint	As Needed	500-1,000 gal
Antifreeze	As Needed	<55 gal
Pesticides	As Needed	<55 gal
<b>Operations</b>		
Antifoam (e.g., Polyglycol ester – Nalco 7471)	April, August, December	500 gal + 3 x 1,500 gal
Flocculant (e.g., Cationic Polyacrylamide – Nalco 9907)	Monthly	6,000 lb
Inhibitors (e.g., Phosphonomethylated Amine – Nalco 1387)	Fortnightly (2 times per month)	4,000 gal
32% Hydrochloric Acid	Daily	4,000 gal
Cooling Water Treatment Sulfonated Carboxylated Polymer (e.g., TRASAR 23260 Nalco)	March, July, November	1,800 gal
Bio-Detergent <sup>1</sup> (e.g., Nalco 97ND048)	February, June, October	1,500 gal
12% Sodium Hypochlorite	Every 4 days	4,000 gal
Biocide (e.g., Nalco 1317)	April, August, December	400 gal
Diesel Fuel	January, July	1,000 gal
Sulfuric Acid <sup>2</sup> 29.5 wt%	Once per year	60 gal
Various Laboratory Chemicals	Fortnightly (every 2 weeks)	Less than 5 lb
ARI-340, Iron Concentrate Solution	January, July	640 gallons
ARI-350 Chelate Make-up	Every 20 days	640 gal
ARI-400 Biochem	June, December	85 gal
ARI-600 Surfactant	May, November	85 gal
45 wt% Potassium Hydroxide Solution	Every 45 days	640 gal



## **TRAFFIC AND TRANSPORTATION**

**CEC SITING REGULATIONS & INFORMATION, Appendix B (h) (1) (B):** Tables which identify each agency with jurisdiction to issue applicable permits and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment TRA-4:** Please submit tables, which identify agencies with jurisdiction to issue permits and approvals or to enforce LORS.

**Response:** Agencies are shown in Table 5.10-11 Agency Contact List for LORS

**TRAFFIC AND TRANSPORTATION**

**CEC SITING REGULATIONS & INFORMATION, Appendix B (h) (4):** A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.

**INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment TRA-5:** Please submit a permit table.

**Response:** See permit table below.

LORS	Permit (Application)	Issuing Agency	Processing Time
California Vehicle Code, Section 35780	Single-Trip Transportation Permit (oversized or excessive loads over state highways)	Caltrans	One-day

## VISUAL RESOURCES

**CEC SITING REGULATIONS & INFORMATION, Appendix B (g) (6) (C):** After discussions with staff and community residents who live in close proximity to the proposed project, identify the scenic corridors and any visually sensitive areas potentially affected by the proposed project, including recreational and residential areas. Indicate the approximate number of people using each of these sensitive areas and the estimated number of residences with views of the project. For purposes of this section, a scenic corridor is that area of land with scenic natural beauty, adjacent to and visible from a linear feature, such as a road, or river.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment VIS-1:** Please provide the estimated number of residences with views of the project.

**Response:** During field surveys conducted within the VSOL, it was estimated that 12 detached homes are present and may have views of the proposed project site and/or transmission line alternatives. These viewers occur within the foreground viewing threshold. A typical setting from these viewpoints would include fully or partially screened views of the proposed power plant project by surrounding agricultural fields, mature trees, hedge rows, and fences. Approximately 50 detached homes occur within the VSOL at distances varying from ½ mile to 3 miles to 5 miles.

**VISUAL RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, Appendix B (g) (6) (D):** A description of the dimensions, color, and material of each major visible component of the project.

**INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment VIS-2:** Please provide a description of the dimensions, color, and materials of each major visible component of the project.

**Response:** The site arrangement for the major facilities are depicted in more detail on Figures 3.3-1a and 3.3-1b. See Figures 3.3-4 and 3.3-6 for a visual simulation of the proposed plant site and major visible facilities. The tallest structures on the geothermal plant site will be the gantry crane, at 99 feet tall, and the crystallizers and cooling towers, at 55 feet tall. Painted surfaces within the power plant will be tan in color to blend with the existing natural, surrounding environment; however, certain equipment that would be delivered with finished surfaces (e.g., gantry crane) would not be refinished. The following is a description of the major visible proposed power plant components:

- Steam Turbine Generator and foundation (1) (100 x 190 x 99 - including crane)
- Primary clarifiers (2) (130' diameter, 34' height)
- Secondary clarifiers (2) (130' diameter, 32' height)
- Crystallizes (8) (diameter 17, height 55)
- Cooling Towers (2) (538 x 58 x 58)
- Emergency Relief Tanks (4) (diameter 17'; height 45')
- Steam Vent Tanks (4) (diameter 16'; height 30')
- Dilution water heater (2) (diameter 8'; height 45')

## VISUAL RESOURCES

**CEC SITING REGULATIONS & INFORMATION, Appendix B (g) (6) (F):** An assessment of the visual impacts of the project, including light and glare, and visible plumes.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment VIS-3:** Please discuss the plume impacts from the non-cooling tower exhausts stacks.

**Response:** URS Corporation used a mathematical simulation model to evaluate the potential magnitudes and frequencies of visible moisture plumes from the cooling tower of the SSU6 Project. Specifically, frequency statistics on the length, height, and width of visual plumes were required. This evaluation was one component of the overall visual impacts review conducted for the SSU6 Project. The following sections describe the plume modeling methods, input data, and assumptions used in the analysis, as well as the results.

#### The SACTI Model

The Electric Power Research Institute (EPRI) created the Seasonal/Annual Cooling Tower Impact (SACTI) model to predict cooling tower visible plume dimensions over a full range of meteorological conditions experienced at a given location and the frequency of different plume lengths, widths, and heights as a function of direction from the cooling tower. The sequence of hourly meteorological parameter values (wind speed, wind direction, temperature, relative humidity, cloud cover, and ceiling height) that is read into the model is used to create up to 35 representative meteorological categories for which plume simulations, and 10 representative meteorological categories for fogging and icing simulations, are made. Each hour of the input data record is then assigned to the representative meteorological category it most resembles and the numbers of occurrence for each category are totaled. Three different simulations are made for each category to account for different plume downwash effects when wind directions are parallel, perpendicular and at a 45° angle to the long axis of the cooling tower. The largest dimensions attained by the plume while it remains visible are calculated for each meteorological category and for each wind direction for a maximum of 135 input cases (35 meteorological and 10 fogging/icing categories times three wind directions), and the results are weighted according to frequencies of occurrence of the different cases.

The SACTI results are summarized in terms of typical and reasonable worst-case visible plume dimensions for the entire year, and during daytime and

nighttime hours. For purposes of this analysis, the “typical” plume dimension (height, width, length) is the one that is exceeded 50 percent of the time, and the “reasonable worst-case” is the condition that is exceeded only 5 percent of the time.

### **Meteorological Data**

In the SSU6 cooling tower analysis, SACTI was run using five years of meteorological data from the surface station at the Imperial County Airport and the upper air station in Tucson, Arizona for calendar years 1995 through 1999. These data were also used in the air quality and health risk assessments presented in the SSU6 AFC.

The data were processed differently than for the air quality and health risk assessment, since the SACTI model will not function if there are any missing hours of data. If less than 5 hours of sequential data were missing, the data were replaced by linear interpolation. When 5 hours or more were missing, data from the previous day were substituted. Missing data in the upper air set were replaced with morning and afternoon Holzworth seasonal averages for Tucson, Arizona.

Figure 5.1-2 presents a windrose, which shows the wind direction and speed at the Imperial County Airport for 1995-1999. The wind predominantly blows from the west and west-southwest.

### **Cooling Tower Specifications**

The SACTI model requires input information on the physical dimensions of the cooling tower, as well as average airflow in the tower exhaust and the total heat-dissipation rate. The physical parameters used in the SACTI model simulations are as follows:

#### **COOLING TOWER PHYSICAL PARAMETERS**

<b>Parameter</b>	<b>Value</b>
Number of Cooling Towers	2
Number of Cells per Tower	10
Tower height (m)	17.68
Each Cell Diameter (m)	9.75
Each Tower Building Length (m)	164
Each Tower Building Width (m)	17.7
Heat Dissipation (MW) (all 20 cells)	793.1
Total Air Flow (kg/s) (all 20 cells)	12,273

### **SACTI Results**

Separate applications of the SACTI model were run using the complete 5 year meteorological data set, and with the daytime and nighttime only data subsets. All model runs used the cooling tower operating parameters listed in the table above.

The model output predicted dimensions of the simulations for each of the representative meteorological categories that were selected from the meteorological input data, and the percentage of time the model predicted various visible plume lengths, heights and widths to occur.

The dimensions of the worst-case plumes are predicted to be visible during daytime hours, when the plumes will be most noticeable. The dimensions of these worst-case daytime plumes were predicted to have a maximum visible length of 70 to 80 meters, a visible height of 30 to 40 meters above the tower, and a visible width of 30 to 40 meters. This modeled plume is included on visual simulations for two sensitive receptors, the residence near the Refuge (Figure 5.12-8C), and Red Island Recreation Area (Figure 5.12-9B).

Three non-cooling tower sources of plumes were also considered during the visual assessment they are as follows:

- Atmospheric Steam Vent Tank (emergency situations only) - ( 6 trips at 2 hours per year, + 1 cold start 45 hours)
- PTU/ITU (test well and drilling situations only) - (operations PTU: 3 "clean out" at 48 hours, 1 drilling at 48 hours, 6 warm start at 5 hours, 5 cold starts at 2 hours) , (operations ITU: 3 clean out 18 hours each)
- Dilution Water Heater (continuous)

The plumes generated by these sources would be intermittent throughout the lifetime of the project and were not considered significant contributors to changes in the existing visual setting when compared to scale and spatial dominating characteristics of existing similar facilities within the VSOI. Typical plume dimensions from these sources would range from 60 to 100 feet above the exhaust and 15 to 30 feet wide. These dimensions are based on field observations in the VSOI of existing non-cooling tower sources of plumes at existing similar facilities.

Given the number of existing facilities producing plumes within the VSOI, the addition of the proposed project would not create a significant change in the viewing conditions. The visual impacts on sensitive viewers resulting from plumes generated by the facility would range from less than significant to no impact.

**VISUAL RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, Appendix B (h) (2):** A discussion of the conformity of the project with the requirements listed in subsection (h)(1)(A).

**INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment VIS-4:** Please provide a discussion of the conformity of the project with the requirements listed in subsection (h)(1)(A). IN addition, discuss how the project will conform to all the policies in Table 5.12-5.

**Response:** A statement of conformity has been added to Table 5.12-5.

**Table 5.12-5**

Jurisdiction	LORS	Requirements/Statement of Conformity	Conformance Section	Administering Agency	Agency Contact
<b>5.12 Visual Resources</b>					
<b>Federal</b>					
	California Desert Conservation Area Plan – 1980 (as amended): Energy Production and Utility Corridors Element	<p>The BLM will focus on the same factors affecting the public lands and their resources as those used by the CEC, including visual quality. The visual resources study was conducted utilizing BLM methodologies to determine conformance with agency aesthetic objectives.</p> <p><b>Statement of Conformity:</b></p> <p><i>This project is in conformance with BLM aesthetic management objectives as achieved through the siting of portions of the transmission line through areas classified by the BLM as being most compatible with this type of project (i.e., VRM Classes III and IV).</i></p>	5.12	BLM	1
<b>State LORS related to visual resources are not applicable</b>					
<b>Local</b>					

Dated September 18, 2002

Jurisdiction	LORS	Requirements/Statement of Conformity	Conformance Section	Administering Agency	Agency Contact
	Land Use Regional Vision Goal 3	<p>Achieve balanced economic and residential growth while preserving the unique, natural, scenic, and agricultural resources of Imperial County.</p> <p><b>Statement of Conformity:</b></p> <p><i>Through the consolidation of similar facilities within a specific geographic area the preservation of unique or scenic resources is achieved in other areas.</i></p>	5.12	Imperial County Planning Department	2
	Land Use Regional Vision Objective 3.4	<p>Protect and improve the aesthetics of Imperial County and its communities.</p> <p><b>Statement of Conformity:</b></p> <p><i>Through the consolidation of similar facilities within a specific geographic area the preservation of unique or scenic resources is achieved in other areas.</i></p>	5.12	Imperial County Planning Department	2

Dated September 18, 2002

Jurisdiction	LORS	Requirements/Statement of Conformity	Conformance Section	Administering Agency	Agency Contact
	Circulation & Open Space Scenic Highways Objective 4.3	<p>Protect areas of outstanding scenic beauty along the highways and protect the aesthetics of those areas.</p> <p><b>Statement of Conformity:</b></p> <p><i>Through the consolidation of similar facilities within a specific geographic area the preservation of unique or scenic resources is achieved in other areas. Additionally, the siting of the L-Line Interconnection across Highway 86 avoids impacting views towards Salton Sea when compared to the alternative considered which is located parallel to Highway 86 within the foreground of travelers with views of Salton Sea.</i></p>	5.12	Imperial County Planning Department	2
	Circulation & Open Space Scenic Highways Objective 4.5	<p>Develop standards for aesthetically valuable sites. Design review may be required so that structures, facilities, and activities are properly merged with the environment.</p> <p><b>Statement of Conformity:</b></p> <p><i>All major components of the proposed power plant will be painted in a tan color to blend more naturally with the surrounding setting or as painted by the manufacturer. Additionally, SSU6 will be sited within proximity to 2 other similar facilities that effectively mitigates the proposed project becoming the dominant feature within the existing setting.</i></p>	5.12	Imperial County Planning Department	2

Dated September 18, 2002

Jurisdiction	LORS	Requirements/Statement of Conformity	Conformance Section	Administering Agency	Agency Contact
	Conservation & Open Space <i>Goal 7</i>	<p>The aesthetic character of the region shall be protected and enhanced to provide a pleasing environment for residential, commercial, recreational, and tourist activity.</p> <p><b>Statement of Conformity:</b></p> <p><i>Through the consolidation of similar facilities within a specific geographic area the preservation of unique or scenic resources is achieved in other areas.</i></p>	5.12	Imperial County Planning Department	2
	Conservation & Open Space <i>Objective 7.1</i>	<p>Encourage the preservation and enhancement of the natural beauty of the desert and mountain landscape.</p> <p><b>Statement of Conformity:</b></p> <p><i>Through the consolidation of similar facilities within a specific geographic area the preservation of unique or scenic resources is achieved in other areas.</i></p>	5.12	Imperial County Planning Department	2
	Conservation & Open Space <i>Goal 10</i>	<p>Open space shall be maintained to protect the aesthetic character of the region, protect natural resources, provide recreational opportunities, and minimize hazards to human activity.</p> <p><b>Statement of Conformity:</b></p> <p><i>Through the consolidation of similar facilities within a specific geographic area the preservation of unique or scenic resources is achieved in other areas.</i></p>	5.12	Imperial County Planning Department	2

Dated September 18, 2002

Jurisdiction	LORS	Requirements/Statement of Conformity	Conformance Section	Administering Agency	Agency Contact
	Geothermal Transmission Goal 5	<p>When planning and designing transmission lines, the County will consider the following impacts to agricultural lands, wildlife, and the natural desert landscape:</p> <p>Require all major transmission lines to be located in designated corridors.</p> <p><b>Statement of Conformity:</b></p> <p><i>Design lines for minimal impacts on agriculture, wildlife, urban areas, and recreational activities. The siting of the transmission lines avoids, to the extent practical, wildlife, urban areas, recreational activities, and impacts on agricultural areas. The proposed transmission lines will be located within designated corridors.</i></p>	5.12	Imperial County Planning Department	2

## **VISUAL RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, Appendix B (h) (3):** The name, title, phone number, and address, if known, of an official within each agency who will serve as a contact person for the agency.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment VIS-5:** Please provide a schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.

**Response:** No other permits are required pertaining to visual resources.

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (1) (B) ALL:** Information demonstrating that the project as proposed in the application will comply with all such standards, ordinances, and laws.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-1:** Please provide information that demonstrates that the project will comply with Public Resources Code Division 3, Chapter 4, Sections 3700-3776 requirements regarding geothermal production and injection wells.

**Response:** The Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) supervises the drilling, operation, maintenance, and plugging and abandonment of onshore and offshore oil, gas, and geothermal wells, preventing damage to: (1) life, health, property, and natural resources; (2) underground and surface waters suitable for irrigation or domestic use; and (3) oil, gas, and geothermal reservoirs. Division requirements encourage wise development of California's oil, gas, and geothermal resources while protecting the environment.

Cal. Public Resources Code, Division 3, Chapter 4 (Sections 3700-3776) governs the permitting of drilling, operation, maintenance, and abandonment of geothermal resource wells (including exploratory, production and re-injection wells) by DOGGR. DOGGR's review and approval process is regulated by the provisions contained in the California Code of Regulations, title 14, Sections 1900 et seq. regarding Statewide Geothermal Resources. These regulations address the following:

Drilling (§§ 1930 - 1937.1);

Blowout Prevention (§§ 1941 - 1942.2);

Completion and Production (§§ 1950 - 1954);

Injection (§§ 1960 - 1966);

Subsidence (§§ 1970 - 1971); and

Plugging and Abandonment (§§ 1980 - 1981.2).

Section 3724.3 requires DOGGR's approval prior to commencement of drilling geothermal wells. DOGGR retains its authority to issue such permits, despite the CEC's generally exclusive permitting authority, as described in Response to Comment LU-1. Therefore, the Applicant will submit a Notice of Intention to

Drill ("Notice") for DOGGR's review and approval demonstrating compliance with the regulatory requirements described above. The Notice will be submitted following the completion of the CEC's Final Staff Assessment.

DOGGR will act as a responsible agency under the California Environmental Quality Act ("CEQA") (Cal. Public Resources Code §§ 21000 et seq., Cal. Code of Regulations, Title 14, §§ 15000 et seq.). Therefore, DOGGR will have an opportunity to comment upon the proposed project during the CEC's environmental review. Additionally, as a responsible agency, DOGGR will consider the environmental review prepared by the CEC prior to issuing drilling permits for the Salton Sea Unit 6 wells, consistent with the State CEQA Guidelines (Cal. Code of Regs., title 14, § 15096). No additional environmental review is anticipated.

The Applicant is in consultation with DOGGR regarding the issuance of drilling permits. Applications for the necessary permits will be submitted after completion of the CEC's CEQA review. It is anticipated that the CEC will impose a condition on the proposed project to obtain the necessary DOGGR approvals prior to commencing drilling for the wells.

Although compliance with DOGGR's regulations will be demonstrated in the Notice, the AFC provides detailed information regarding the proposed wells to provide the basis for the CEC's environmental review. Since geothermal brine is not within the definition of groundwater, the potential impacts related to the geothermal resource are described in Section 5.2, Geologic Hazards and Resources, of the AFC. See, e.g., Section 5.2.1.4.4, Subsidence, which states that "the potential for damaging localized settlement from regional subsidence is considered low." Additionally, Section 5.2.2.2, Operation-Related Impacts states that "with implementation of a brine re-injection program, depletion of the geothermal reservoir and subsidence during operation of the wells will be less than significant.

The Facility Description and Location provides a description of the well drilling procedures and safeguards to avoid impacts to water quality. See, Section 3.3.2.1., Production Wells and Pipelines, for a description of the proposed drilling depth, casing, and separation of wells. See, also, Section 3.3.2.4.3, Injection Wells, for a description of the proposed drilling depth, casing, and location of the injection wells.

Unit 6 wells will be drilled and cased in such a way that ground waters are protected both during the drilling operations and during the productive life of the well. Production wells started out with a 36" conductor pipe set at 30'.

From this point a 36" inch hole is drilled to about 400' and a 30" string of casing is cemented in the hole protecting all formations from surface to 400'. The next stage of the well drilling is to drill a 30" hole to about 1400' and cement in a 24" string of casing, protecting the formation from 400' to 1400' with a single string of casing, and the formation from 0'-400' with two strings of casing. Before the bit ever gets near the Geothermal reservoir the shallow sands are sealed and protected. The next stage of the drilling is to drill a 22" hole to 2625' which is the top of the pay zone. A 16" casing is then cement into place protecting from 1400' to 2650' with one string, 400' to 1400' with two strings of casing and 0'-400' with three strings of casing as drilling proceeds into the Geothermal reservoir. A 14-3/4" hole is drilled to a total depth of about 7350'. At this time a string of 13-3/8" titanium casing is cemented inside the 16" casing from the surface to 2570' providing an additional string of protection to the shallow sands. During the productive life of the well the top 400' is protected by 4 strings of casing, from 400' to 1400' with 3 strings, and from 1400' to 2570' with two strings of casing. Only the Geothermal reservoir is open to the wellbore.

The injection wells are in a different part of the field where the geothermal reservoir is deeper and therefore the casing strings are set deeper. The casings used are also not as large. In an injection well a 30" conductor is set at 30', a 24" string at 500', a 18-5/8" at 1800', and a 13-3/8" string at 3600'. The open hole section of the well is only open in the geothermal reservoir and extends from 3600' to about 8600'. Multiple casing string protection is also present in the injection wells for the shallow sands. Injection wells have a replaceable 10-3/4" carbon steel liner hung in the well from surface to 3600' which the fluids are injected through.

In summary, the Applicant will be required to comply with Sections 3700-3776 of the Cal. Public Resources Code and the regulatory requirements imposed by DOGGR, as a condition of approval of the proposed wells. The required Notices of Intention to Drill will be submitted to DOGGR in due course, probably subsequent to the completion of the CEC's Final Staff Assessment. Nevertheless, the Applicant has initiated consultation with DOGGR and anticipates that DOGGR will review and comment upon the AFC, consistent with its role as a responsible agency.

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, §2022 (b) (1) (D) ALL:** A schedule including when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-2:** Provide all requirements and all information necessary to satisfy California Division of Oil, Gas, and Geothermal Resources permit requirements regarding geothermal production and injection wells.

**Response:** See Response to Comment Water-1.

## **WATER RESOURCES**

### **CEC SITING REGULATIONS & INFORMATION, §2022 (b) (2) (E) WATER:**

#### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-3:** Please provide a complete Report of Waste Discharge to apply for Waste Discharge Requirements from the Colorado River Basin Regional Water Quality Control Board (RWQCB)

**Response:** An Application/Report of Waste Discharge was submitted to the Colorado River Basin Regional Water Quality Control Board on September 13, 2002. A copy of the Application/Report and letter is provided below.



**CE Obsidian Energy LLC**  
A Limited Liability Company

September 13, 2002

**Via FedEx**

Ms. Michelle Ochs  
Colorado River Basin Regional Water Quality Control Board  
73-720 Fred Waring Drive, Suite 100  
Palm Desert, CA 92260

Re: Salton Sea Unit 6: Waste discharge requirements permit application

Dear Ms. Ochs:

I am pleased to enclose an application for waste discharge requirements permit on behalf of CE Obsidian Energy LLC (CEOE) and in connection with Salton Sea Unit 6 (SSU6 Project), a proposed 185-Megawatt geothermal energy plant.

On July 29, 2002, CEOE filed an Application for Certification (AFC) with the California Energy Commission (CEC) seeking approval through the six-month siting provisions of the construction of SSU6 Project. A copy of the AFC was transmitted by the CEC to the Colorado River Basin Regional Water Quality Control Board (RWQCB).

Please do not hesitate to contact me at (760) 348-4066 if you have any question or require additional information with respect to this application.

Sincerely,

Bernard Raemy  
Project Development Manager

Enclosures

Cc: Ray Kellner  
Cathy Woollums  
Jeff Hansen  
Vince Signorotti

A Non-recourse Affiliate of  
**MIDAMERICAN ENERGY HOLDINGS COMPANY**  
7030 Gentry Road, Calipatria, California 92233  
(760) 348-4066 Fax: (760) 346-4073

CALIFORNIA ENVIRONMENTAL  
PROTECTION AGENCYState of California  
Regional Water Quality Control BoardAPPLICATION/REPORT OF WASTE DISCHARGE  
GENERAL INFORMATION FORM FOR  
WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT

## I. FACILITY INFORMATION

## A. Facility:

Name: Salton Sea Unit VI			
Address: 7030 Gentry Road			
City: Calipatria	County: Imperial	State: CA	Zip Code: 92233
Contact Person: Cathy S. Woollums		Telephone Number: (563) 333-8009	

## B. Facility Owner:

Name: CE Obsidian Energy LLC			Owner Type (Check One)	
Address: 7030 Gentry Road			1. <input type="checkbox"/> Individual 2. <input type="checkbox"/> Corporation	
City: Calipatria	State: CA	Zip Code: 92233	3. <input type="checkbox"/> Governmental Agency 4. <input type="checkbox"/> Partnership Agency	
Contact Person: Cathy S. Woollums			5. <input checked="" type="checkbox"/> Other: <u>Limited Liability Company</u>	
			Telephone Number: (563) 333-8009	Federal Tax ID: 75-3008328

## C. Facility Operator (The agency or business, not the person):

Name: CalEnergy Operating Corporation			Operator Type (Check One)	
Address: 7030 Gentry Road			1. <input type="checkbox"/> Individual 2. <input checked="" type="checkbox"/> Corporation	
City: Calipatria	State: CA	Zip Code: 92233	3. <input type="checkbox"/> Governmental Agency 4. <input type="checkbox"/> Partnership Agency	
Contact Person: Cathy S. Woollums			5. <input type="checkbox"/> Other:	
			Telephone Number: (563) 333-8009	

## D. Owner of the Land:

Name: Imperial Magma LLC			Owner Type (Check One)	
Address: 551 W. Main Street, Suite 1			1. <input type="checkbox"/> Individual 2. <input type="checkbox"/> Corporation	
City: Brawley	State: CA	Zip Code: 92227	3. <input type="checkbox"/> Governmental Agency 4. <input type="checkbox"/> Partnership Agency	
Contact Person: Vincent Signorotti			5. <input checked="" type="checkbox"/> Other: <u>Limited Liability Company</u>	
			Telephone Number: (760) 351-3050	

## E. Address Where Legal Notice May Be Served:

Address: One River City Place, 106 E. Second Street		
City: Davenport	State: IA	Zip Code: 52801
Contact Person: Cathy S. Woollums		Telephone Number: (563) 333-8009

## F. Billing Address:

Address: One River City Place, 106 E. Second Street		
City: Davenport	State: IA	Zip Code: 52801
Contact Person: Cathy S. Woollums		Telephone Number: (563) 333-8009

CALIFORNIA ENVIRONMENTAL  
PROTECTION AGENCY



State of California  
Regional Water Quality Control Board

APPLICATION/REPORT OF WASTE DISCHARGE  
GENERAL INFORMATION FORM FOR  
WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT



## II. TYPE OF DISCHARGE

Check Type of Discharge(s) Described in this Application (A or B):

☐ A. WASTE DISCHARGE TO LAND

☒ B. WASTE DISCHARGE TO SURFACE WATER

Check all that apply:

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Domestic/Municipal Wastewater Treatment and Disposal | <input type="checkbox"/> Animal Waste Solids                      | <input type="checkbox"/> Animal or Aquacultural Wastewater  |
| <input type="checkbox"/> Cooling Water  | <input type="checkbox"/> Land Treatment Unit                      | <input type="checkbox"/> Biosolids/Residual                 |
| <input type="checkbox"/> Mining   | <input type="checkbox"/> Dredge Material Disposal                 | <input type="checkbox"/> Hazardous Waste (see instructions) |
| <input type="checkbox"/> Waste Pile   | <input checked="" type="checkbox"/> Surface Impoundment           | <input type="checkbox"/> Landfill (see instructions)        |
| <input type="checkbox"/> Wastewater Reclamation                               | <input checked="" type="checkbox"/> Industrial Process Wastewater | <input checked="" type="checkbox"/> Storm Water             |
| <input type="checkbox"/> Other, please describe: _____                        |   |   |

## III. LOCATION OF THE FACILITY

Describe the physical location of the facility.

1. Assessor's Parcel Number(s)  
Facility: 020-110-08  
Discharge Point:

2. Latitude  
Facility: 33 10' 50"  
Discharge Point:

3. Longitude  
Facility: 115 37' 28"  
Discharge Point:

## IV. REASON FOR FILING

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> New Discharge or Facility                                       | <input type="checkbox"/> Changes in Ownership/Operator (see instructions)               |
| <input type="checkbox"/> Change in Design or Operation  | <input type="checkbox"/> Waste Discharge Requirements Update or NPDES Permit Reissuance |
| <input type="checkbox"/> Change in Quantity/Type of Discharge <input type="checkbox"/> Other: _____ |   |

## V. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Name of Lead Agency: California Energy Commission

Has a public agency determined that the proposed project is exempt from CEQA? ☐ Yes ☒ No

If Yes, state the basis for the exemption and the name of the agency supplying the exemption on the line below.

Basis for Exemption/Agency: \_\_\_\_\_

Has a "Notice of Determination" been filed under CEQA? ☐ Yes ☐ No

If Yes, enclose a copy of the CEQA document, Environmental Impact Report, or Negative Declaration. If no, identify the expected type of CEQA document and expected date of completion.

Expected CEQA Documents:

☐ EIR

☐ Negative Declaration

Expected CEQA Completion Date: \_\_\_\_\_

CALIFORNIA ENVIRONMENTAL  
PROTECTION AGENCY



State of California  
Regional Water Quality Control Board

**APPLICATION/REPORT OF WASTE DISCHARGE  
GENERAL INFORMATION FORM FOR  
WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT**



Page 7

## VI. OTHER REQUIRED INFORMATION

Please provide a COMPLETE characterization of your discharge. A complete characterization includes, but is not limited to, design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any Best Management Practices (BMPs) used, and a description of disposal methods.

Also include a site map showing the location of the facility and, if you are submitting this application for an NPDES permit, identify the surface water to which you propose to discharge. Please try to limit your maps to a scale of 1:24,000 (7.5' USGS Quadrangle) or a street map, if more appropriate.

## VII. OTHER

Attach additional sheets to explain any responses which need clarification. List attachments with titles and dates below:

See Attached

You will be notified by a representative of the RWQCB within 30 days of receipt of your application. The notice will state if your application is complete or if there is additional information you must submit to complete your Application/Report of Waste Discharge, pursuant to Division 7, Section 13260 of the California Water Code.

## VIII. CERTIFICATION

"I certify under penalty of law that this document, including all attachments and supplemental information, were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name: Edward J. Heinrich

Title: President

Signature: [Signature]

Date: 9/13/02

### FOR OFFICE USE ONLY

Date Form 200 Received:	Letter to Discharger:	Fee Amount Received:	Check #:
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## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (g) (1):** ...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-4:** The information required in subsequent sections below will, as a whole, satisfy the information requirements for this section.

**Response:** See Responses to Water-6.

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (A):** All information required by the Regional Water Quality Control Board in the region where the project will be located to apply for:

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-5:** See information requirements for Appendix B (g) (14) (A) (I) below.

**Response:** See Responses to Water-6.

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (i):** Waste Discharge Requirements; and

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-6:** Provide a letter from the Colorado River Basin Regional Water Quality Control Board (RWQCB) that states the application for Waste Discharge Requirements (WDR) has been accepted as complete, and that the RWQCB has all information required of a discharger to apply for WDRs.

**Response:** CEC Staff has clarified that the completed ROWD is sufficient for data adequacy.

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (B):** A description of the hydrologic setting of the project. The information shall describe, in writing and on maps at a scale of 1:24,000, the chemical and physical characteristics of the following water bodies that may be affected by the proposed project:

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-7:** See information requirements for Appendix B (g) (14) (B) (I) and (iii) below.

**Response:** See responses to Water-8 and Water-9

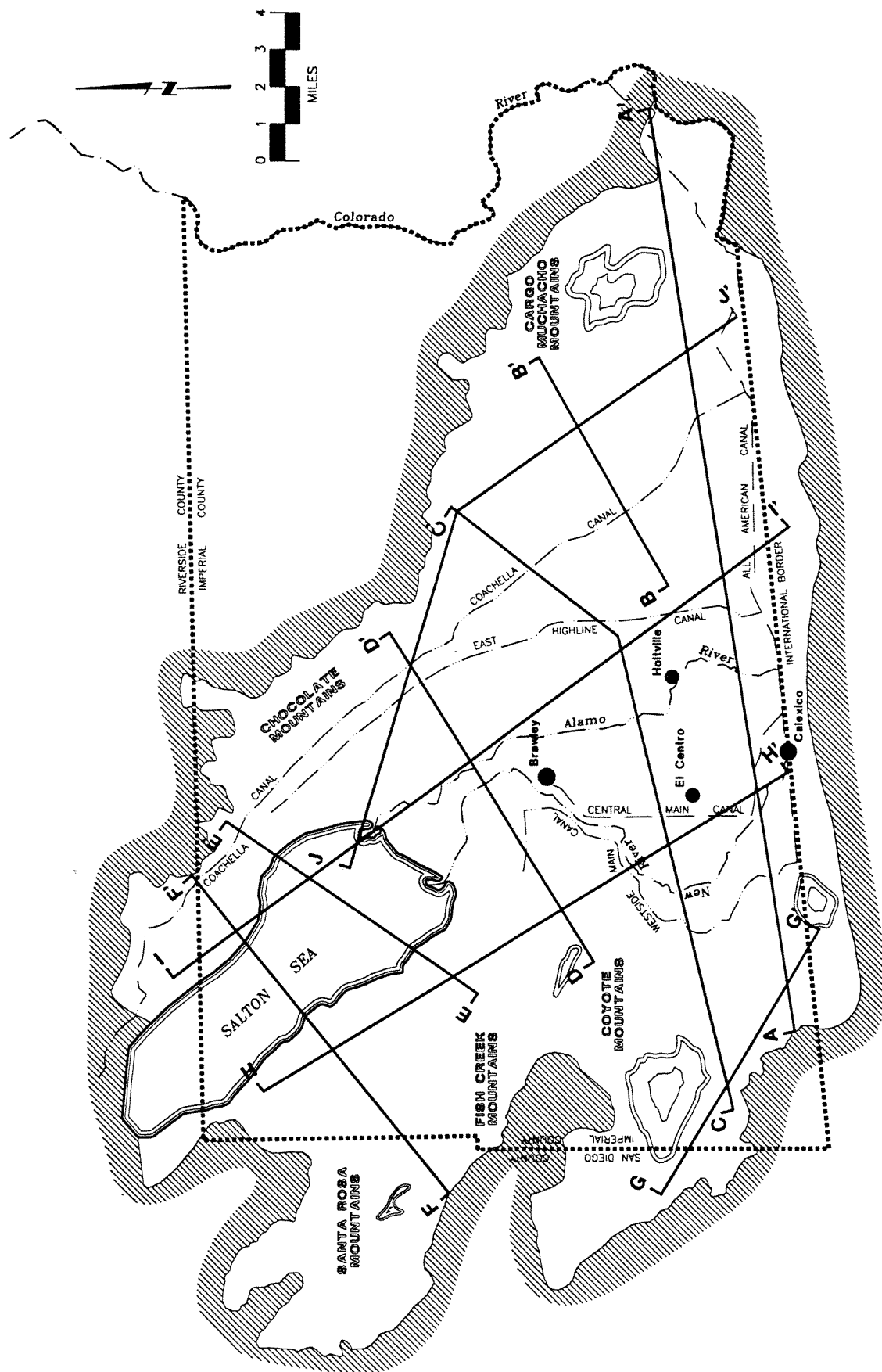
## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (B):** A description of the hydrologic setting of the project. The information shall describe, in writing and on maps at a scale of 1:24,000, the chemical and physical characteristics of the following water bodies that may be affected by the proposed project:

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-8:** Please provide a hydrostratigraphic map depicting the underlying aquifers in the plant vicinity and their location relative to project elements.

**Response:** Hydrostratigraphic cross-sections depicting aquifers underlying the plant vicinity are shown in Figures 5-3, 5-12 and 5-13, Location of Geologic Cross Sections, Aquifer Cross-Section I-I', and Aquifer Cross-Section J-J', respectively, from the Imperial County Groundwater Study, Final Report, prepared in June 1996. In addition to the hydrostratigraphic information presented in these figures, lithologic stratigraphy underlying the plant vicinity was previously presented in Figure 5.2-2 of the AFC. Production brine for the SSU6 facility will be extracted from depths of about 2,500 feet to 5,500 feet in the Palm Springs Formation shown in Figure 5.2-2. Much deeper magma emplacements heat the hydrothermal brines in this formation.



Location of Geologic Cross-Sections  
Figure 5-3

# AQUIFER CROSS-SECTION NORTH TO SOUTH (J-J)

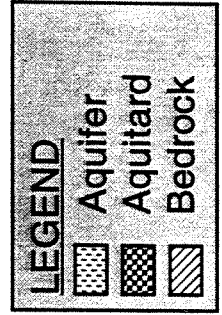
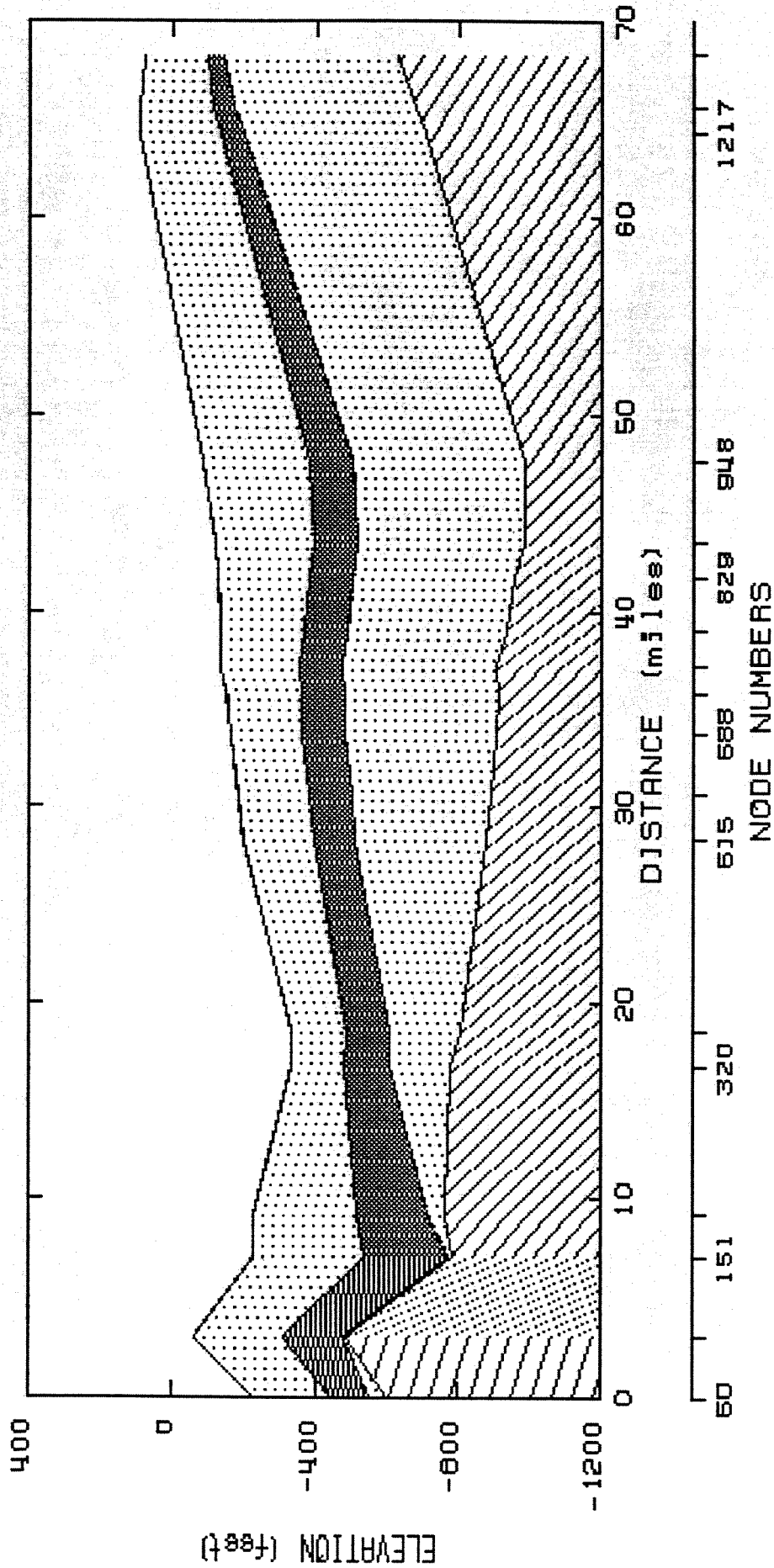


Figure 5-12  
Aquifer Cross-Section I-I'

# AQUIFER CROSS-SECTION NORTH TO SOUTH (J-J)

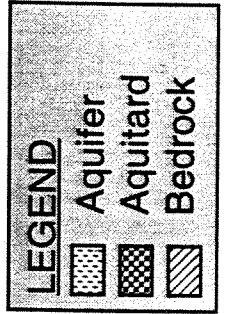
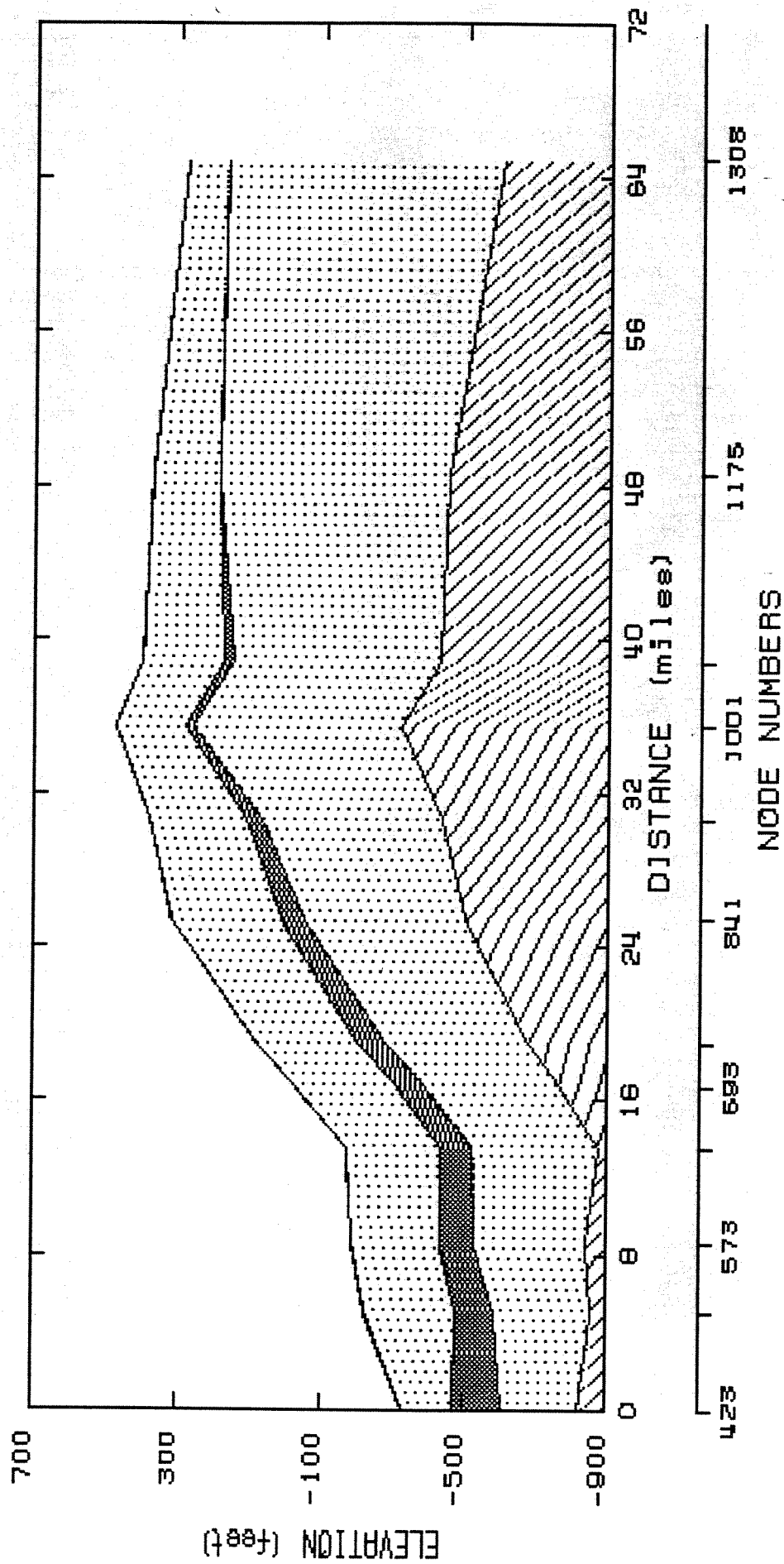


Figure 5-13  
Aquifer Cross-Section J-J'

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (B) (iii):** Water inundation zones, such as the 100-year flood plain and tsunami run-up zones.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-9:** Please provide maps that delineate the project's relation to FEMA flood zone boundaries.

**Response:** Flood damage protection will be provided in conformance with the County's Flood Damage Prevention Regulation. County Land Use Ordinance, Title 9, Division 16. As described in Section 5.8.5.3 of the AFC, the County of Imperial requires a Development Permit prior to construction or development of facilities lying at or below the -220 foot contour. The County retains jurisdiction for approval of project well pads and pipelines. Therefore, for well pads and pipelines located at or below the -220 foot elevation, a Development Permit will be required prior to construction or development. The CEC's certification will be issued in lieu of local County permits, including the Development Permit, for other project elements located at or below the -220 foot contour; therefore, no separate County Development Permit would be required.

To assist the CEC in its review, this response provides a summary of the County's standards and permitting procedures for the Development Permit. See, County Land Use Ordinance, Title 9, Division 16.

The County identifies areas of special flood hazard as follows: (1) the areas of special flood hazard, and areas of mud-slide (i.e. mud-flow) hazards identified by the Federal Emergency Management Agency (FEMA) or the Federal Insurance Administration in a scientific and engineering report entitled "Flood Insurance Study" for Imperial County dated 09-15-83 with an accompanying Flood Insurance Rate Map(s) (on files at the County Court House and Planning/Building Department); (2) any area of land located around the Salton Sea and lying at or below the -220 foot elevation contour; and (3) other areas identified by the County flood-plain administrator and approved by the Board of Supervisors. County Land Use Ordinance, Title 9, Division 16, § 91603.01.

A Development Permit shall be obtained before construction or development begins within any area of special flood hazards. County Land Use Ordinance, Title 9, Division 16, § 91604.00. The application is required to provide relevant details regarding the proposed structures or fill, including but not

limited to the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing. Specifically, the following information is required:

- Proposed elevation in relation to mean sea level of the lower floor (including basement) of all structures.
- Proposed elevation in relation to mean sea level to which any structure will be flood proofed.
- All appropriate certifications listed in Section 91604.02, Subsection D, of the ordinance (i.e., certification by a registered engineer or architect that the County's standards have been satisfied).
- Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

**County Land Use Ordinance, Title 9, Division 16, § 91604.00.**

The County Building Official serves as the Flood Plain Administrator for the County of Imperial. The Flood Plain Administrator has the responsibility of reviewing proposed Development Permits to determine that (i) the permit requirements of this ordinance have been satisfied, (ii) all other required State and Federal permits have been obtained, (iii) the site is reasonably safe from flooding, and (iv) the proposed development does not adversely affect the carrying capacity of areas where base flood elevations have been determined even if a flood-way has not been designated.

The Development Permit standards require that the project facilities be designed to be "flood-proofed", so that the facility is watertight and substantially impermeable to the passage of water and/or have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. These plans must be certified by a registered professional engineer or architect that the relevant standards of this are satisfied. County Land Use Ordinance, Title 9, Division 16, § 91605.00. In addition, utilities shall be designed in accordance with the County's standards. Specifically, all new and replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from systems into flood waters. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding. County Land Use Ordinance, Title 9, Division 16, § 91605.01.

A FEMA flood zone map for the area of concern has been re-produced with a marker for the proposed plant site and is provided below. The site is within Zone A, denoting within the 100-year flood zone.

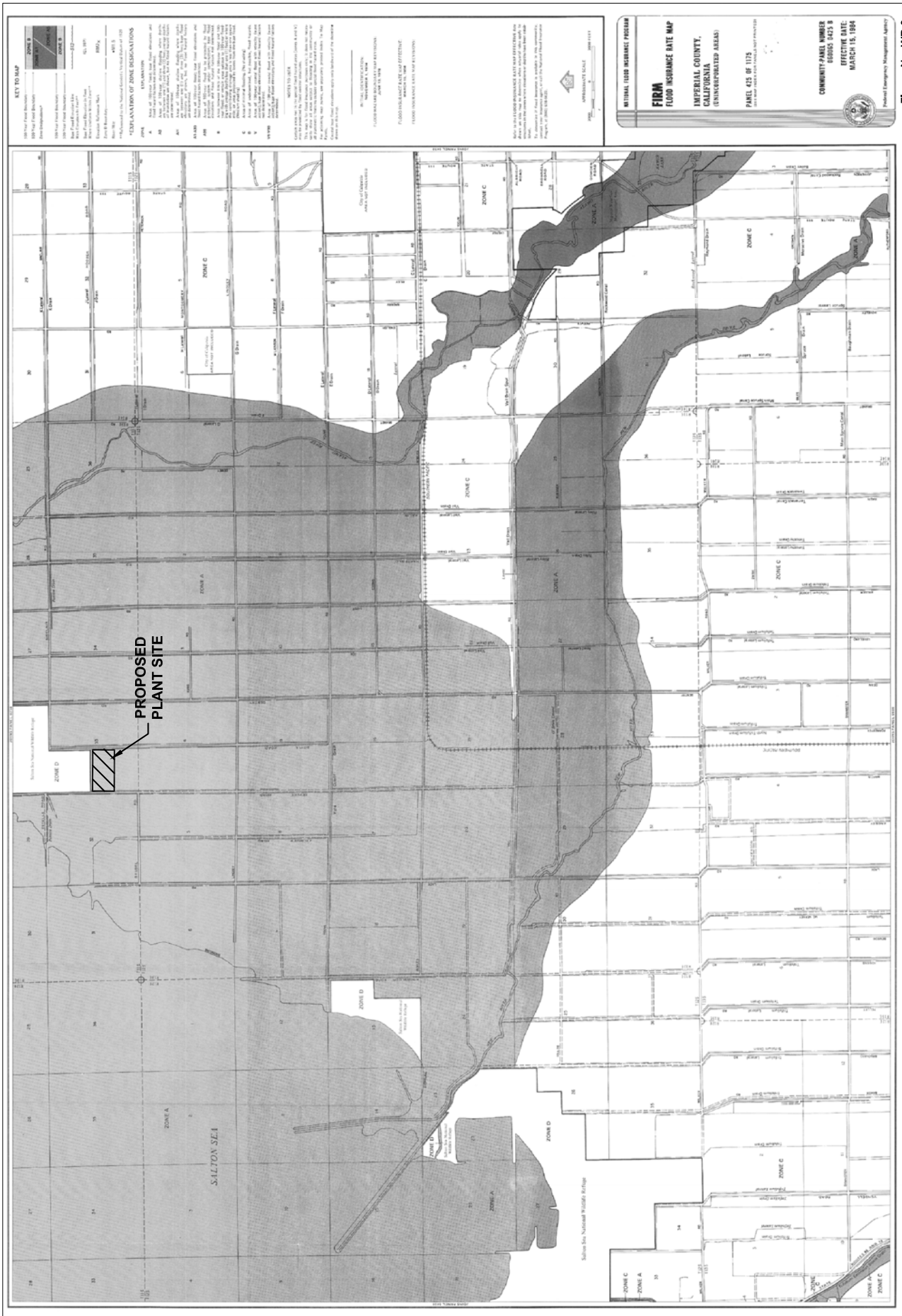


Figure No. WR-9

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (C):** A description of the water to be used and discharged by the project. This information shall include:

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-10:** See information requirements for Appendix B (g) (14) (C) (I) and (iv) below.

**Response:** See response to Water-11.

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (C) (i):** Source of the water and the rationale for its selection, and if fresh water is to be used for power plant cooling purposes, a discussion of all other potential sources and an explanation why these sources were not feasible;

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-11:** Because a portion of the Imperial Irrigation District (IID) fresh water supply for the project will be used for cooling tower makeup, please provide a discussion of all other potential sources and an explanation why these sources were not feasible.

**Response:** IID water is allocated for use as cooling water and dilution water for injecting brine solutions, as well as the RO water. Of the 293 acre-ft, almost all (290 acre-ft) is allocated for process water used for cooling and dilution of brine for injection. Cooling tower make-up water will primarily come from brine condensate and fresh water would not be used for cooling tower make-up under normal operating conditions.

Other source waters (e.g. drainage water or groundwater) were not appropriate for use. Other sources of water were evaluated such as drain water or groundwater, but these were not available in sufficient quality or quantity.

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (C) (iv):** A description of all facilities to be used in water conveyance, treatment, and discharge. Include a water mass balance diagram.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-12:** Page 5.4-8 of the AFC references a stormwater collection system to be employed during construction. Please describe this system in greater detail, including any associated treatment facilities.

**Response:** The storm water detention basin and the brine pond will be excavated during the initial stages of grading. During construction, berms and drainage swales will be used as necessary to intercept, divert and convey surface run-off, generally sheet flow, to prevent erosion.

Earth berms/drainage swales and lined ditches may be used to convey surface runoff down any temporary slopes as well as to intercept and divert runoff to avoid sheet flow over sloped surfaces. They will also be used to intercept runoff from paved surfaces.

Due to the generally flat topography of the project site, the need for other soil stabilization and sediment controls, such as check dams, plastics, and blankets to prevent scour and erosion are not anticipated.

Earth berms/drainage swales will be inspected for washouts after heavy rains. Damaged features will be repair or replaced. All run-off during construction will be directed to either the storm water detention basin or the brine pond for evaporation. No treatment is proposed.

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, §Appendix B (g) (14) (D):** A description of pre-, and post-construction runoff and drainage patterns, including:

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-13:** See information requirements for Appendix B (g) (14) (D) (I) and (ii) below.

**Response:** See responses to Water-14 and Water-15.

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (D) (i):** Precipitation and storm runoff patterns.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-14:** Please provide a pre-construction runoff pattern diagram that depicts the direction of flows across the site. The diagram should include clearly marked topographic contours.

**Response:** A drawing of post-construction on-site drainage is provided in Figure 3.3-11 of the AFC. Figure 5.4-1A of the AFC shows the general topography of the area including topographic lines. Although the area is generally flat, Figure 5.4-1A illustrates topographic lines showing slope direction toward the Salton Sea.

The figure below illustrates the surface runoff pattern in and around the project area. The existing site is surrounded by a levee with the roads on top of the levee, and the agricultural fields encompassed by the levee. Runoff outside of the levee is diverted to the drainage network that conveys water toward the Salton Sea. Runoff within the project area flows to the northwest corner towards an existing dewatering pump.

Run-off in the project vicinity is highly controlled by a series of berms and drains. Figures and photos within the AFC illustrate the existing landscape with the arrangement of roads, levees, and agricultural fields. Photos 2,3,6,7, and 10 to 13 at the end of Section 5.5 are helpful in illustrating the elevated road and levee network and the depressed agricultural fields. Figure 3.3-6 provides a visual simulation of the plant site with the elevated bermed roads encompassing the project area.

## WATER RESOURCES

CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (D) (ii): Drainage facilities and design criteria.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment WATER-15:** Please describe the detention pond proposed for the operational phase of the project in greater detail. Provide a conceptual description of the pond, including design specifications and calculations that verify that the pond would not discharge any stormwater during the 100-year storm event. Please also confirm that the pond would operate as an evaporation/percolation pond, as the AFC seems to infer. If the pond will not be operating as an evaporation/percolation pond, please describe how it will function.

**Response:** The detention pond is intended to be operated as an evaporation/percolation pond. It has been designed to hold stormwater runoff from a 10-year, 24-hour storm under predeveloped conditions (192,000 cuft). The volume required for a 100-year, 24-hour storm event is 626,200 cuft. In the event of an occurrence of a 100-year, 24-hour storm event, the pond has been designed to transfer storm water to the 136, 000-sqft freshwater storage pond. Water from the freshwater pond would be sent to the dilution water heater and used to process heat-depleted brine. The service water pond has 754,800 cubic feet total capacity including 482,800 cubic feet standard capacity and 272,000 emergency capacity provided by 2 ft of free board. It stores 209,800 cuft of water under normal operating conditions in order to provide a 6-day water supply buffer (the applicant may store additional water if a service interruption from IID is anticipated) and has a total remaining capacity of 545,000 cuft (273,000 standard and 272,000 emergency) to handle major storms. The 100-yr, 24-hour storm event will maintain 0.82 ft of free board in the service water pond. The reuse of detention pond water in the dilution water heaters will prevent the direct discharge of stormwater runoff to the IID drains or the Salton Sea.

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (E) (ii):** The effects of construction activities and plant operation on water quality.

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-16:** Construction will likely require dewatering in some areas. Please describe how dewatered groundwater will be handled and/or discharged.

Response:

The current IID tile drainage system consists of a network of perforated piping located several feet below ground. For the project location, at the southwest quarter of Section 33, these tile lines drain to the west and feed into tile lines draining to the north. All of the tile water for the southwest quarter of Section 33 is ultimately directed to the northwest corner of this quarter section.

Two drainage sumps (Sump WP-14 and WP-45) exist at the northwest corner of this quarter section and serve as the collection point for these tiles. Both sumps are owned and operated by the IID. Each sump consists of a circular concrete structure, approximately six feet in diameter, extending approximately 10 feet below the ground surface level. Three 5 horsepower electric vertical pumps serve these two sumps. These pumps are powered by the IID low voltage electrical system. As the sumps fill with water, the pumps start automatically and pump the liquid directly into the IID drainage ditch on the west side of Severe Road. During the dewatering process that will be employed for construction, this tile drainage system will be used for groundwater dewatering.

## WATER RESOURCES

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (g) (14) (iii):** The effects of the project on the 100-year flood plain or other water inundation zones.

### INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS

**Comment WATER-17:** Page 5.4-9 of the AFC states that an 8-foot high berm will be constructed around the perimeter of the site. Please provide modeling results that demonstrate the berm's capability to prevent onsite flooding for a 100-year frequency, 24-hour duration runoff event while avoiding impacts to downstream persons and property caused by perimeter diversions of flows. Provide all assumptions and parameters used in the model. Please also describe any mitigation that would be required to reduce flooding impacts, either on-site or downstream.

**Response:** Modeling was not utilized to determine the height of the 8-foot berm. As required by the Imperial County Land Use Ordinance No. 1203, flood protection must be provided to facilities located around the Salton Sea and lying at or below the -220 foot elevation contour. Therefore, the existing and designed berms on Section 33 have established or designed elevations of -220 ft. minimum. The berm will be designed to withstand hydrostatic pressure up to the height of the berm.

The existing berm surrounding the agricultural field at the project site will remain intact (but improved), therefore there will be no new obstructions outside the project site that would disrupt flood waters. The improvements affect only the southwest quarter of Section 33. This is the area depicted in Fig. 3.3-1A. Only the southern half of the Section 33 would be affected by the presence of the new berm constructed along the southern border of the power plant site as illustrated in Fig. 3.3-1A (the facility constitutes the northern half of this area as shown). Subsurface drainage south of the facility will be maintained using the existing tile system. A tile line will be installed along the western edge of the facility to transport this water by gravity to one or both the existing sumps previously referenced (Sump WP-14 and WP-45).

Surface runoff that currently accumulates along the south side of the existing berm discharges into an existing sump operated by IID. Similarly, surface water runoff that would accumulate along the outside edge of the facility's proposed new southern dike will flow westward, discharge into a sump, and be pumped into the IID drainage ditch on the west side of Severe Road.

## **WATER RESOURCES**

**CEC SITING REGULATIONS & INFORMATION, § Appendix B (h) (2):** A discussion of the conformity of the project with the requirements listed in subsection (h)(1)(A).

### **INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS**

**Comment WATER-18:** The AFC states that the project would comply with the requirements set forth in Division 3, Chapter 4, Sections 3700-3776 of the Public Resources Code regarding geothermal production and injection wells, but provides no details as to how this will be achieved. Please describe how the project will comply with these requirements, including any permits that would need to be obtained from the California Division of Oil, Gas and Geothermal Resources.

**Response:** See Response to Comment Water-2.